AMS REALTIME Resources

Version 5.1

User Guide

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Program Description

Overview

Multi-Platform Multi-Protocol Client/Server

AMS REALTIME Resources is a multi-platform, multi-protocol solution for time collection and resource scheduling. This means that there is no need to change networks or force conformance to a single type of computer system within your company! AMS REALTIME Resources client/server architecture can communicate across UNIX, Macintosh and PC workstations simultaneously.

The AMS REALTIME Resources software can be run in either standalone or client/server mode. When running in stand-alone mode, a local database is accessed by each AMS REALTIME Resources client program. This is mostly used for designing a database and piloting before going live with a system. When AMS

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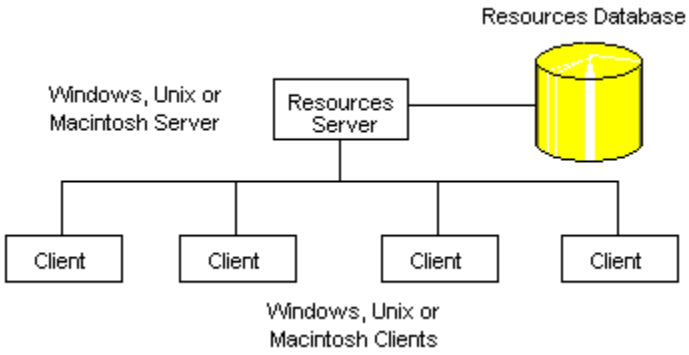
REALTIME Resources is run in client/server mode, each client has multi-user access to a single database, which is located on the server machine.



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Client/Server mode: database transaction services for many clients.

The AMS REALTIME Resources program is available for Windows, UNIX X Windows (Motif) and Macintosh environments. A configuration file provides information regarding the local system configuration, the communication protocols used and the location of the database.

Login Access Control

When a user logs into AMS REALTIME Resources, a Login ID and Password identify the employee. The employee's Access Level determines which portions of the AMS REALTIME Resources software can be accessed, as well as what data that can be examined or modified. Both Passwords and Access Levels are setup and maintained by the System Administrator. This assures the integrity as well as the confidentiality of the database.

Access to specific datasets, fields, and data records within each dataset, can be specifically controlled for each user by setting up and assigning an Access Level. For example, a particular level of user must have access to the Time reporting section, but may also need to view certain fields from the Employee dataset. However, some other fields in the Employee dataset may contain sensitive information which should not be released to the general public (e.g., rates and other personnel data).

A filter can be created to display only specific fields of a dataset. When that filter is attached to a Read-Only Access Control Code, the users who have that security level assigned will be able to see selected Employee information records, but will not be allowed to change anything. This method of access control is extremely flexible, and can also be used to allow users to see only their own project, department, or employee information.

Only users with the specifically required Access Level can modify the data structures, change Access Levels, or update information. The System Administrator should be the *only* user with the required Access Level to modify the Access dataset.

These tools allow AMS REALTIME Resources to be used as a central repository for all planning, time, cost, and other related information that may be sensitive without being concerned about unauthorized access to data

The default database has only one access level predefined, which allows full access to everything. This should not be changed until the database has been completely designed. However, additional access levels can be added to fully define each employee access level for purposes of security. There is no internal limit to the number of access levels which can be defined by the System Administrator.

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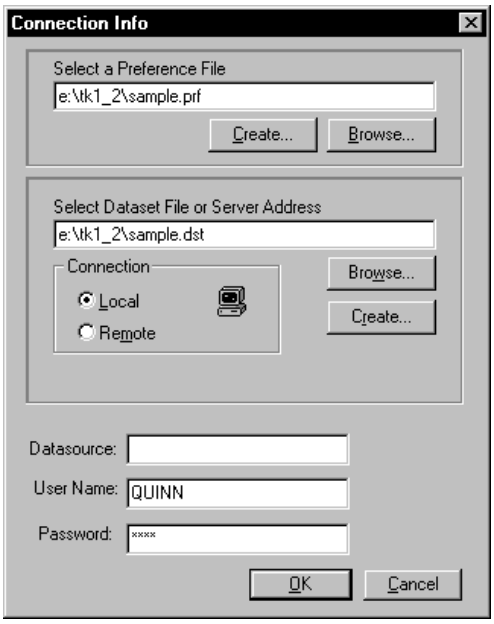
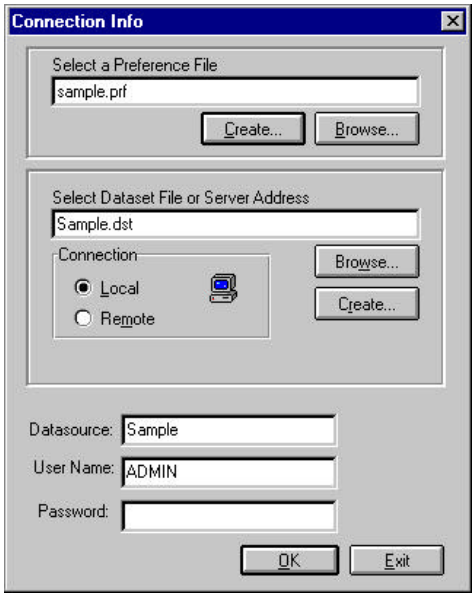


AMS REALTIME Resources Login Screen

When you first enter AMS REALTIME Resources, you will be prompted for a dataset and preference file. These file names can be pre-specified in your client configuration file.



A Sample Login to a Local Database

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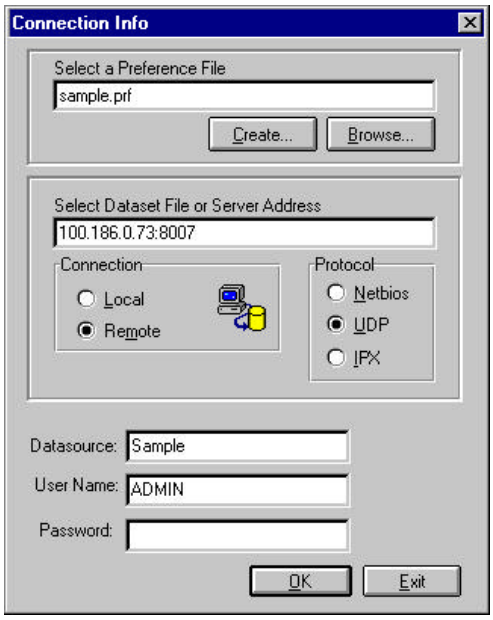

A Sample Login to a Server Database

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Getting Started

An Introduction to AMS REALTIME

AMS REALTIME Resources can be run as a single-user system with a local database, or as a multi-user, client/server program with a central database located on a server. In the multi-user mode, the server is accessed through a client program on each workstation, which communicates over a network. In most implementations, AMS REALTIME Resources is used with the multi-user, client/server mode.

Standalone or client/server access to a AMS REALTIME Resources database mode is determined through preference and/or configuration files, which are discussed later in this manual. The system configuration and design should be customized by the system administrator. For the purposes of this introduction, we will assume that you have installed the software on your local machine exactly as it comes from the box and have not made any configuration changes. In this case, you will be operating the software in standalone mode, which is the recommended way to learn about AMS REALTIME Resources.

When AMS REALTIME Resources is first launched, the splash screen will display the software version number and the AMS copyright. Since the default configuration does not contain a preference file setting, a dialog will allow you to Create a new preferences file or Find an existing one.

The preferences file contains the location of the AMS REALTIME Resources database, the last user that used AMS REALTIME Resources, and user-defined views, filters and report layouts. If this is the first time that AMS REALTIME Resources has been executed, a preference file will not yet exist. Choose the **Create** button under **Select a Preference File**.

The Connection Info dialog is used to tell AMS REALTIME Resources where to find the required preference and database files. Use the **Browse…** button to seek an existing preference file or the **Create…** button to specify a new one. You could select the

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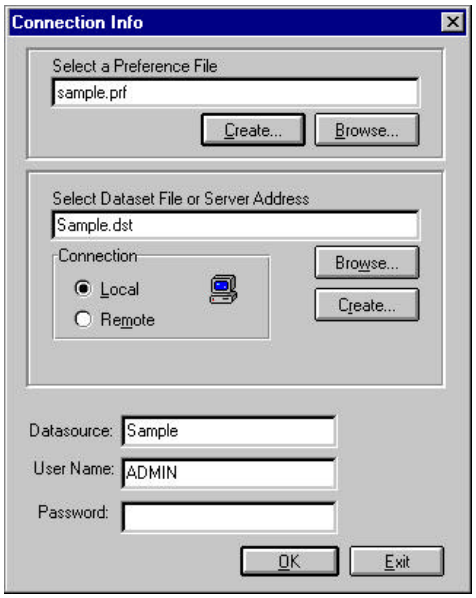
Browse… option and then choose the *sample.prf* preference file to examine the *sample.dst* database provided in the full installation.

However, for this introduction, choose the **Create** option so that we can build an new preference file and create a new dataset. Choosing **Cancel** will terminate the program and return to the Window environment.

Next, you will be presented with a dialog for entering the name of the new preference file. You might use your name or your initials. The name must not be longer than eight characters and must conform to the file naming conventions of your operating system. An extension of *.prf* will automatically be appended to the end of the filename you specify. Hit the **Enter** key when you are through typing, or use the mouse and *click* on the **OK** button.

The Connection Info dialog accepts information about how you will connect to the AMS REALTIME Resources dataset. **Local** access indicates that you will be working with a database directly on your local hard disk. **Remote** access indicates that you will be accessing a database over the network. *Click* on **Local**. When first designing a new database, it is recommended that you work with AMS REALTIME Resources locally. When the design is complete, the database and preference file can be moved onto the server.



AMS REALTIME Resources Connection Info Dialog

Once you have created a new preference file you will need to either point the preference file at an existing dataset, or use the second **Create…** button to define a new database. For this example select create and define a new database.

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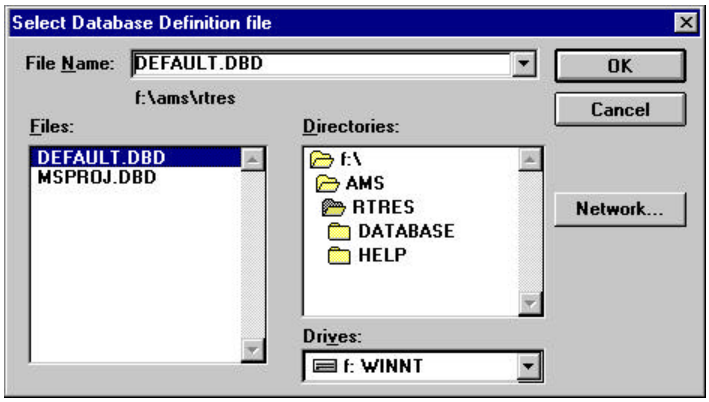
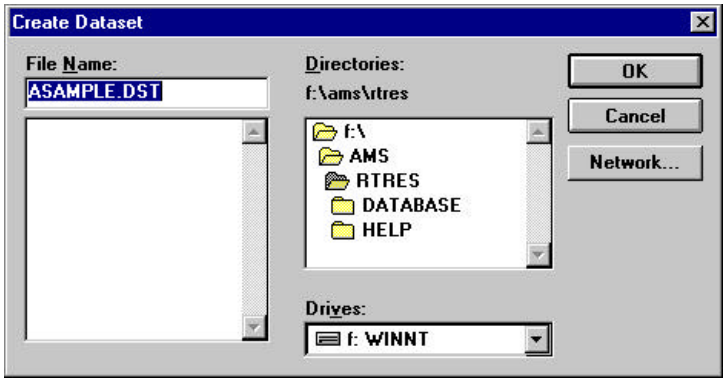


Choosing a Database Template

After you *click* on **Create…**, you will be presented with another dialog for selecting a database template. Use the **default.dbd** to create a customized database, or select the **msproj.dbd** if you will be using Resources to store Microsoft Project data.

Next you will be prompted with a dialog for entering the database name. You might use your company or department name for the database, but it must conform to file naming conventions. After you have entered the database name, hit the **Enter** key or *click* on **OK**. An empty default database will be created with that name, and will have *.dst* as the file extension.



Create Database File Dialog

Since this is a new empty database, you will be prompted for the Login ID for the System Administrator. Use your last name followed by the first initial, limiting the entire login ID name to eight characters. This length can be changed later on, but the default database sets eight characters as the maximum login name.

Next, you will be asked for your full name. It is assumed that you will be the System Administrator of this database; therefore, your name and login ID will be entered as the first employee record. Use your full name with upper and lower case. Middle name is optional. You are initially limited to 30 characters.

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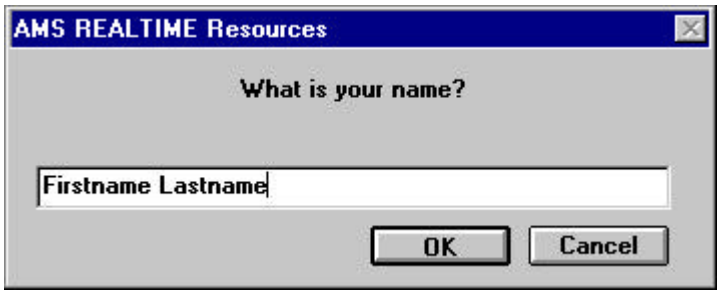

An empty database has now been created, complete with a user ID entry for the system administrator. The system will now perform a normal login sequence the same as it will each time AMS REALTIME Resources is run again in the future. You will be presented with the Connection Info dialog which has two fields at the bottom for entering your user name and password. Use the Login ID you built for the system administrator above, as it is the only valid user in the database so far.

AMS REALTIME Resources will log you into the database and present you with a timecard screen for the current week for the logged on user. This completes the building of a new database and an initial login process.

Now let's look at the various parts of the system using this empty database. Once you understand how to use the various parts of the system, you will be able to modify the datasets and add information to them.

The Default Database

Since you have created an empty database, it is important to understand how the AMS REALTIME Resources database is organized. The default database is comprised of five basic datasets: Activity, Employee, Organization, Actuals and Workplan. First, we will discuss the standard fields. You can modify the datasets and create new ones to facilitate your organizational needs later on. This information can be found in the chapter on Defining Datasets.

AMS REALTIME Resources has several basic modes of operation. Each mode is entered by selecting one of the Tabs on the Function line at the top of the screen, below the Menu line. To help understand the database, select Update mode by *clicking* on the **Update** Tab. The display will change and you will be presented with the following screen.

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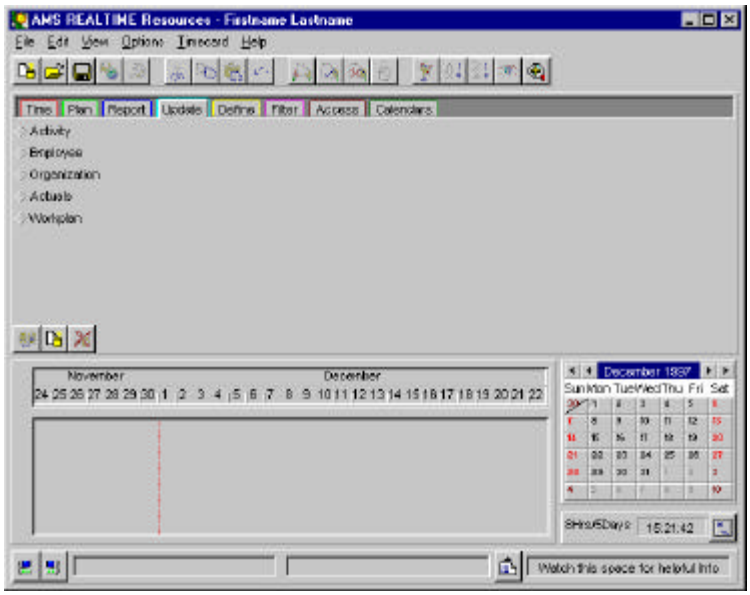

Update Screen

The left side of the screen contains a list of additional dataset buttons. Once Update mode has been selected, *clicking* on a dataset button will open that dataset. These are the five dataset components that are automatically created when building a new database. They are:

Dataset	**Function**
Activity	Dataset for defining the list of activities to be worked on
Employee	Dataset for defining the list of employees who can work on the activities
Organization	Dataset for defining an organizational structure
Workplan	Dataset where resource / activity assignments are stored.
Actuals	Dataset where actual hours reported by each resource on an activity are stored.

We will examine these datasets one at a time to understand the standard data fields and how they relate to the whole database. To view a specific dataset, simply *click* on the button to the left of the dataset name. The first three default datasets are text type, which means that they hold records containing alphanumeric information. We will begin with the Activity Dataset.

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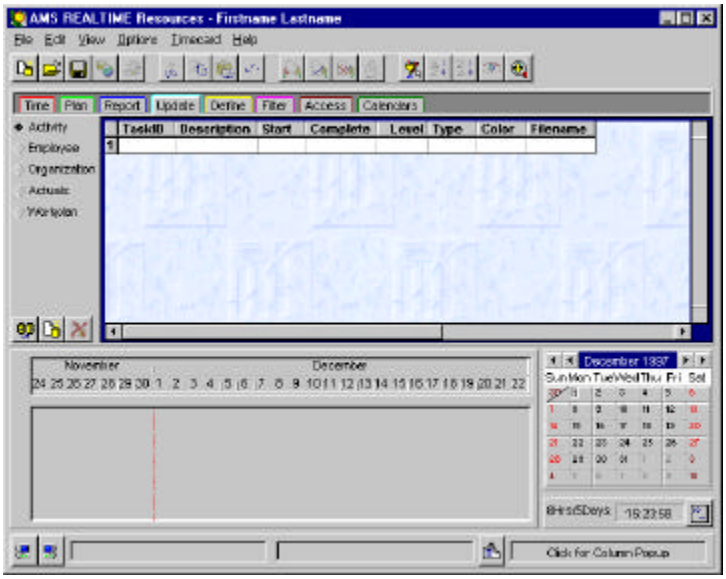
The Activity Dataset



Activity Dataset

When you are in Update mode, *clicking* on the Activity dataset button will cause the activity dataset to be displayed in table mode. Notice that there are a number of columns labeling each field and one empty row for adding new activities. Since the database has just been created, it is empty. We will create some activities so we can post actual time in the Timecard screen.

Before we do that, however, let's take a look at how fields are defined in AMS REALTIME Resources. To look at the data definitions that have been defined in the default Activity dataset, *click* on the **Define** Tab, keeping the **Activity** dataset selected. Depending on the physical size of the screen you have, the fields may or may not all be visible on the screen. If they are not, *click* on the **Auto Resize** option under the **View** menu. Auto Resize will recalculate the column width based on the longest entry in each field and the length of the field name, whichever is longest. The following fields (columns) will be displayed:

Field	Type	Contents
TaskID	A15	Unique alphanumeric code to identify each activity
Description	A30	Text Description of activity to be performed
Start	Date	Date in the form DD-MON-YY for activity Start
Complete	Date	Date in the form DD-MON-YY for activity Complete
Level	Percent	Default Level of Effort for this activity (e.g., 50%, 100% etc.)
Type	A2	Activity type P - Project NP -

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		Non-Project
Color	A8	Activity Color and Pattern (for graphic representation)
Filename	A40	Filename associated with this activity for import/export

These fields represent the basic minimum number of fields that AMS REALTIME Resources requires for activities in order to fully perform its functions. You can add any number of fields to this dataset or modify the default definitions. For this introduction, we will simply review the default fields of the standard datasets.

The Employee Dataset

With Define still selected, *click* on the Employee button to the right of the activity table and the employee dataset will be displayed. The default employee dataset contains the following fields:

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Field	Type	Contents
ResID	A15	Unique code to identify each resource (employee)
Org Code	A15	Organization code for employee. Refers to Organization dataset
Name	A30	Employee (resource) name
Login	A8	Login ID for employee
Access Level	A15	Access level (specifies the users access level for all datasets and functions)
Password	A8	Login password
Type	Pick	Resource Type: Person or Generic

These fields represent the minimum default fields used for employee records. Of course, additional fields can be added to contain information such as a manager's name, employee skill level code, pay rate, etc.

The Organization Dataset

The Organization dataset is used to control access to the data by organization, as well as to define the hierarchical position of each employee. Managers can look at both their own data and the data for those who report to them, while employees can only look at their own information. Department heads, on the others hand, might be able to look at information across the entire department, while Vice Presidents might have access to multiple departments, and so on. More information on access control by organization structure can be found in the section on Hierarchical Organization Data Coding, which is located in the chapter on Updating Information.

The basic Organization dataset simply contains an identifying organization code and an associated organization title.

Field	Type	Contents
Code	A15	Unique code to identify the organization to which each employee belongs
Description	A30	Description of title of the Organization.

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The Workplan and Actuals Datasets

The Workplan dataset holds information about working assignments: the planned amount of time an employee should need to complete a task. A plan record exists for each employee assignment to an activity.

The Actuals dataset contains the actual hours that an employee has posted as worked on each task. This dataset contains many internal fields, such as a flag that determines if the record has been Submitted, Approved, Rejected, or Posted. If the system is configured so that the time approval process is not being used, records normally marked as Posted will be marked as Recorded after they have been submitted.

Both of these datasets collect and maintain time-phased data, and are referred to as Numeric type datasets. If a managers has an Access Level which provides Write access to one or both of these datasets, it is possible to create or edit work assignments or actual hours directly. However, these datasets are not generally accessed directly through Updating these tables, but indirectly through the Timecard and Workplan screens. These screen modes are covered later in this manual.

Entering Data

Adding Activities

The first step we will take in creating a new AMS REALTIME Resources database will be to create some activities. We will assign these tasks to employees and then let employees post actual hours worked.

Return to the Activity table by *clicking* on the **Activity** button. Then *click* on **Update** to allow editing of the data. To enter activity data, simply *click* once in the empty cell within TaskID column to set the text cursor and begin typing. Enter a TaskID, such as **AB121.** Then hit the **Tab** key to move the text cursor into the Description column. Enter a Description, Start, Complete, and Level, as shown in the sample data below. Notice that a new empty row is added to the bottom of the table for the addition of another activity as soon as the current line has been used.

Simply add activities into the data table as you would in any other spreadsheet program. Be sure that you enter a percent sign (%) after the Level of Effort. Numbers entered without a percent sign are assumed to be the number of hours per day and will be converted to an equivalent Level of Effort.

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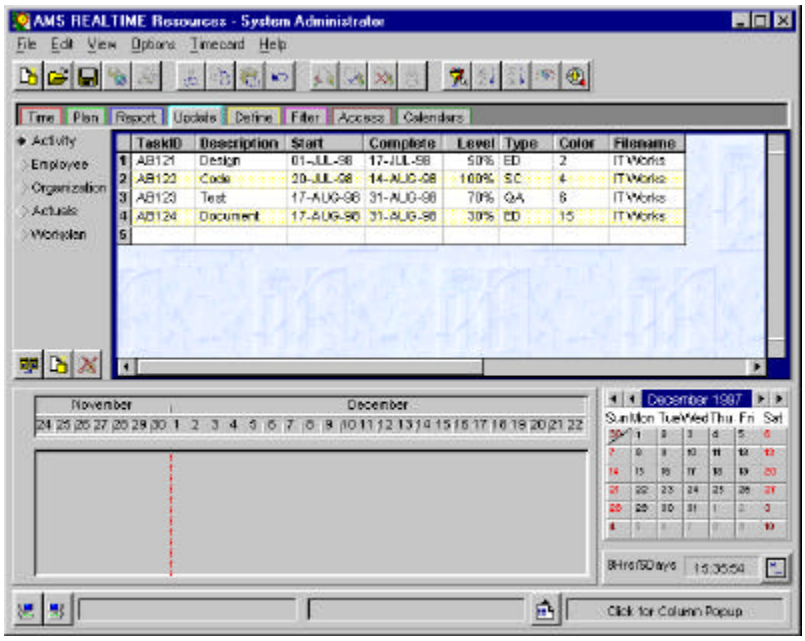
TaskID	Description	Start	Complete	Level
AB121	Design	01-JUL-98	30-JUL-98	50%
AB122	Code	01-AUG-98	15-AUG-98	100%
AB123	Test	15-AUG-98	31-AUG-98	30%


AMS REALTIME Resources - System Administrator
File Edit View Options Timecard Help
Time Plan Report Update Define Filter Access Calendars
Activity
Employee
Organization
Actuals
Workplan
TaskID Description Start Complete Level Type Color Filename
1 AB121 Design 01-JUL-98 17-JUL-98 50% ED 2 IT Works
2 AB122 Code 20-JUL-98 14-AUG-98 100% SC 4 IT Works
3 AB123 Test 17-AUG-98 31-AUG-98 70% QA 6 IT Works
4 AB124 Document 17-AUG-98 31-AUG-98 30% ED 15 IT Works
5
November
December
December 1997
Sun Mon Tue Wed Thu Fri Sat
Click for Column Popup

Entering Activity Data

Dates can be entered in any valid date format, but they will be converted to the DD-MON-YY format. Try entering 8/15/98 instead of 15-AUG-98 for the start of AB123.

This information can also be added through the Dump and Load, or Copy and Paste mechanisms if the data already exists in a text file source. If you are using AMS REALTIME Projects to do your planning, there is an automatic interface to load this information into AMS REALTIME Resources from AMS REALTIME Projects under the File Execute menu.

Adding Employees

Before an employee can login and report their time in AMS REALTIME Resources, he must have an entry in the Employee table. This record contains a unique employee identifier, name, and login. When an employee logs in to AMS REALTIME Resources, this record provides information about the employee's access level. This determines which modes and information can be accessed.

To add employee records to the table, *click* on the button to the left of the Employee label. The employee table will already contain the

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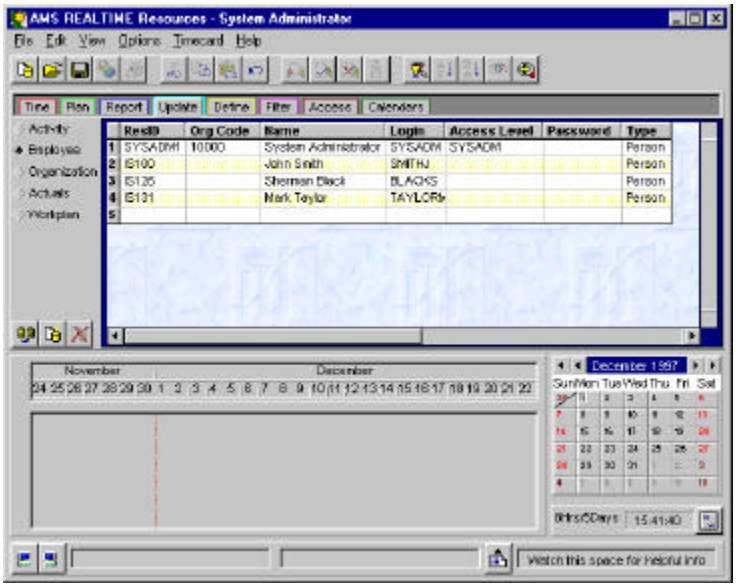
entry you made for yourself when you first created the database. This record will only contain the name and login fields, since that is the only information that was provided during the database creation step.

Enter a Resource ID, Organization Code, and if desired, a Password. If you use a password for this sample, choose something that is easy to remember, or you won't be able to login to AMS REALTIME Resources. If you don't enter a password in the employee record, the password prompt will not be displayed on login. Since we haven't created any Access Levels at this point, leave the Access Level field blank.

Add a few other employee records to the dataset. This will provide us with an employee pool to access from Plan mode in the next step of this introduction. You can use the information from the table below as a reference, or enter your own information.

ResID	Org Code	Name	Login	Access Level	Password
IS100	IS0	*Your Name*	*Your Login*		
IS123	ISP	John Smith	SMITHJ		
IS126	ISP	Sherman Black	BLACKS		
IS131	IST	Mark Taylor	TAYLORM		


AMS REALTIME Resources - System Administrator
File Edit View Options Timecard Help
Time Plan Report Update Define Filter Access Calendars
ResID Org Code Name Login Access Level Password Type
1 SYSADM 10000 System Administrator SYSADM SYSADM Person
2 IS100 John Smith SMITHJ Person
3 IS126 Sherman Black BLACKS Person
4 IS131 Mark Taylor TAYLORM Person
November
December
December 1997
Watch this space for helpful info

Entering Employee Data

Adding Organizations

Now that you have activities and the employees to perform these activities, the next step is to update the organization table. This is used to group employees by organization for selection and reporting. Since the organization code is already a part of the employee data

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record, this information is optional, and you can skip over this section, if desired.

The Organization Code can be used as a hierarchical code that indicates a level within an overall organizational structure. This coding structure can be used to provide certain employees with access to other employee time records by organizational hierarchy.

The sample Org Codes in the table above use IS0 (IS plus zero) as the code for Information Systems, while ISP is the Programming arm of IS and IST is the Testing arm.

As far as access to data is concerned, anyone with the IS0 organizational code can access information relating to IS0, where someone with an organization of ISP can only have access to ISP data. If zeros are used at the end of the organization code, this indicates a "wildcard" access to organizations in the levels below. This might indicate that the individual is a manager and can have access not only to that organization, but to any organizations beneath it in the hierarchical structure. Since your organization code is IS0 in this sample, you will have access to the other organizations as well (ISP and IST).

Add the three organizational code used in the employee dataset and their associated descriptions into the Organization table by *clicking* on the Organization button and entering the data shown below:

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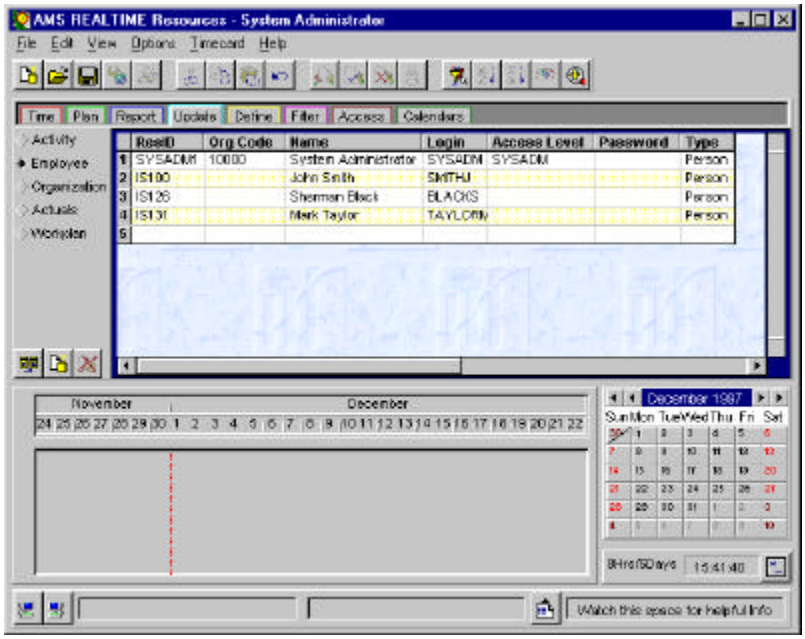
Org Code	Description
IS0	Information Systems
ISP	Programming
IST	Testing
ISD	Documentation


AMS REALTIME Resources - System Administrator
File Edit View Options Timecard Help
Time Plan Report Update Define Filter Access Calendars
Activity
Employee
Organization
Actuals
Workplan
ResID Org Code Name Login Access Level Password Type
1 SYSADM 10000 System Administrator SYSADM SYSADM Person
2 IS100 John Smith SMITHJ Person
3 IS126 Sherman Black BLACKS Person
4 IS131 Mark Taylor TAYLORM Person
5
November
December
December 1997
Sun Mon Tue Wed Thu Fri Sat

Entering Organization Data

Modifying the Data Definitions

The Org Code defaults to an alphanumeric field of 15 characters. Since this is really the same information that is contained in the Organization dataset, we are going to redefine this as a Reference field to the Code in the Organization dataset.

Note: This employee organizational scheme may not be detailed enough to meet your company requirements, but it demonstrates the potential for linking dataset information.

First, select the **Define** function and the **Employee** dataset. *Click* in the **Type** column next to **Org Code**. From the popup list of field types, select reference. Choose the **Organization** dataset from the popup, and the select the **Code** field from the list of Organization fields.

Now choose the **Update** function for the Employee dataset. Click in one of the Org Code fields. A popup will appear that contains all the possible Code selections from the current Organization dataset. Pick the correct Org Code for each employee.

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Summing Up

Now that we have some information in the database, perform a **File Save** and **Exit** in AMS REALTIME Resources. If you look at a directory list of the files on your system, you will find the dataset (**file.dst)** and preferences file (**file.prf**) that you have created in AMS REALTIME Resources.

Before you restart AMS REALTIME Resources, make sure that there are no **dset** or **settings** parameter in the configuration file. You can open the configuration file (**rtr16.ini** for 16 bit software, **rtr32.ini** for 32 bit software, rtp.cfg for Unix and Macintosh) in any simple text editor. Placing a semi-colon character in the first column in front of any configuration switch will cause it to be ignored. Save the file and exit.

AMS REALTIME Resources will accept the preferences file you have created as a command line parameter. On Unix platforms, you can type the name of the preference file after the program name. On Windows platforms, you can change the Properties of the icon and type in the preference file name after the executable name. Then when you *double-click* on the icon, the preference file will automatically load the dataset and other stored information.

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Description	AMS REALTIME Resources
Command Line	rtr16.exe bobjones.prf
Working Directory	c:\realtime

Sample Windows 3.1 Icon Properties

Now start the RESOURCES program. If you haven't passed in a preferences file, AMS REALTIME Resources will provide the same Find, Create and Quit dialog so that you can select one. If you haven't already passed in a preference file using one of the methods above, choose **Find** and select the preference file which you already created.

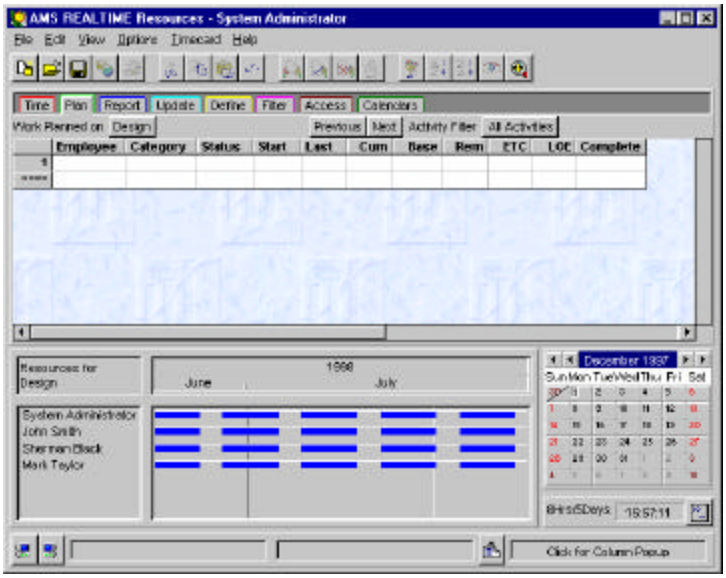
The associated database will be automatically loaded, since internal references to the database name are stored in the preferences file.

Making a Work Plan

Assigning Work

The next step in our process will be to assign employees to work on each activity. While AMS REALTIME Resources can assimilate skill levels and availability to assist in planning, we will limit our introduction to basic resource assignments.

To assign individuals to activities, we will leave Update mode and go into the Plan mode. Simply *click* on the **Plan** Tab below the Menu bar.


AMS REALTIME Resources - System Administrator
File Edit View Options Timecast Help
Time Plan Report Update Define Filter Access Calendars
Work Planned on Design
Previous Next Activity Filter All Activities
Employee Category Status Start Last Cum Base Rem ETC LOE Complete
Resources for Design
1998
June
July
System Administrator
John Smith
Sherman Black
Mark Taylor
December 1997
Sun Mon Tue Wed Thu Fri Sat
Click for Column Popup

Empty Planning Screen

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The Plan tab allows you to create or adjust work assignments for any activity in the dataset. The button after **Work Planned on** shows the current activity for which we are making work assignments. The first activity in the database will appear by default.

If you *click* on the activity button, a popup will appear that allows you to select another activity. Activity filters can be set to limit the activities which appear in the popup for selection. Since our sample dataset is small, we will use our entire list. The two buttons to the right, labeled **Previous** and **Next,** are used to move on to the next or previous activity in the database for further planning.

The table below is used to assign employees to work on the current task. Since we have not made any assignments yet, it will be empty.

The bottom portion of the screen shows a list of employees and their availability through time through the use of a color bar. The color and shading of this bar indicates the availability of each employee. Since no work assignments have been made, these bars are all solid blue, which indicates that each employee is fully available.

To assign an employee to the Design activity, simply *click* in the employee column on the first blank line. A popup menu of all the available employees is displayed for selection. *Clicking* on a name will automatically assign that employee to the task and add the employee information to the blank line. A new line will then be added to the table. This can be used to add more employee assignments to the activity, one at a time.

By default, this work assignment for the selected activity spans the entire task at the default level of effort, which is based on the Start, Complete, and Level fields in the activity record. The actual work assignment dates, as well as the level of effort or total number of hours planned, can be changed for each employee.

Plan work assignments for the Design, Code and Test activities in accordance with the table below. You can easily move to the next activity by *clicking* on the **Next** button.

Activity	**Employee**
Design	*Your Name*
Design	John Smith
Code	John Smith
Code	Sherman Black
Test	Sherman Black
Document	Mary Taylor

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Notice that as you make the assignments, the availability bar at the bottom updates the availability shading for each employee. The color coding represents various degrees of the availability, where blue is fully available, white is fully utilized, and red is over-committed. Varying shades of blue and red indicate partial availability and conflict.

Swapping Plan Assignments

Planned work assignments can be directly interchanged. This method can be used to swap generic resource assignments to specific employees, or to simply reassign work where an employee is overloaded.

To swap a planned resource assignment, select the current plan record by clicking on the row number. Then click on the desired resource from the list of available resources below. The old resource assignment will be marked as Deleted, and the new resource assignment will be added.

Activity Popup List Filtering

The Activity Popup list is can be controlled by Filters defined in the activity filter table. This feature is used to cut down on the potential number of activities that could appear in the list. This list is also controlled by a setting in the configuration file called **GETPLANLISTOPTION=#**. Depending on how this is set, different types of activities will appear in the list. The types of activities are described in the following definition. This definiation can also be found in the Configuration Settings chapter and in the Config.PDF file supplied on the AMS REALTIME CD.

The following number options apply to this setting. The setting affects the items that will be viewed in the Task Popup list in Plan view.

0 - List will display only My Activities. That is to say, a manager will see the activities he and his team are planned on, based on the Organization codes.

1 - Uses the Activity filter.

2 - This option means 0 & 1 are the factors for the list content, i.e. activities must be in both lists.
NOTE: This options should only be set if all the Planning data is created from Projects or another outside source.

3 - This option means 0 or 1 are the factors for the list content, i.e. activities must be in either list.

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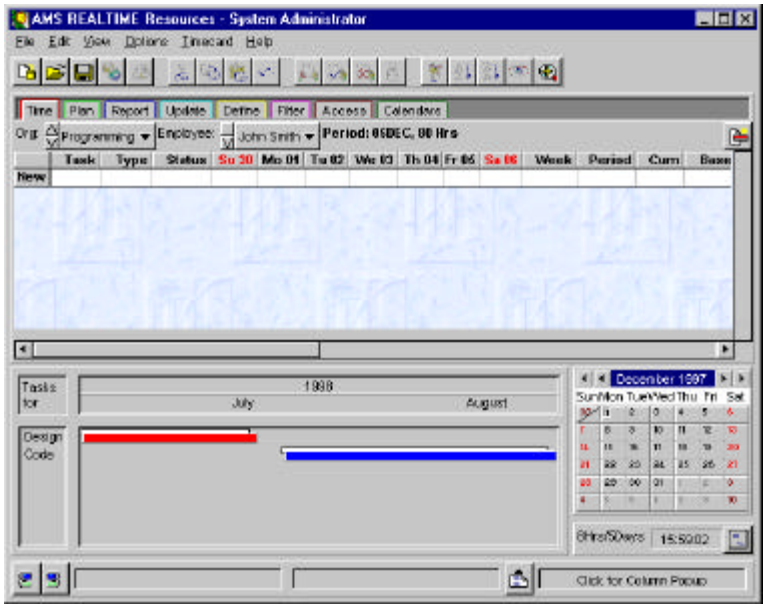
Reporting Time

Posting Actual Hours Worked

When the work assignments have been planned, the actual hours worked against the plan can now be posted by each employee throughout the period of performance. This is done through the Time screen, which is the first screen presented to a newly logged in user. After a database has been customized, the System Administrator can define an Access Level for general user logins that only provides access to this screen.

Return to the timecard screen by clicking on the **Time** tab beneath the menu line. The screen will change and you will be presented with a timecard for the current week.


AMS REALTIME Resources - System Administrator
File Edit View Options Timecard Help
Time Plan Report Update Define Filter Access Calendars
Org: Programming
Employee: John Smith
Period: 05DEC, 00 Hrs
Task Type Status Su 30 Mo 01 Tu 02 We 03 Th 04 Fr 05 Sa 06 Week Period Curr Base
New
Tasks for
1998
July
August
Design Code
December 1997
Sun Mon Tue Wed Thu Fri Sat
8hrs/5days
15:50:02
Click for Column Popup

Timecard Screen for the Current Week

Navigating Through Time

Notice the small calendar in the lower right portion of the screen. It shows the current month, with the days in the past crossed out. It also highlights the weekends in red and has today's date selected.

Also notice that the activity to which you are assigned is displayed in the lower left portion of the screen. This is your task list. Since you are only assigned to the design activity, that will be the only task showing. If other assignments had been made to you, they would all be shown in the task list, which is also referred to as the Gantt chart.

In this case, the Design activity is to occur in July 1998. For the purposes of this example, let's assume that work is being done as

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planned. If the current period is not the first week of July, then you have to move ahead or back to reach the timecard for the 01-Jul-98. The current date can be changed using the calendar.

The simplest way to reach July 1998 is to *click* on the month displayed in the top center of the calendar. A popup will appear which contains all twelve months. *Click* on **July** and the calendar will change to July. If the year is not 1998, then you can move ahead or back a year by *clicking* on the right or left arrow to in the upper right of the calendar box. You can move ahead or back by *clicking* on the corresponding arrows to the left of the month name.

After you have reached July 1998, you can select the first week of July by *clicking* on any day within the first week. For this example, *click* on **July 3rd**, which is the first full work week in July. The timecard screen will display the first week of July 1998. Notice that the background in the task list will highlight the first week, indicating that this is the current reporting period.

Entering Actual Time

To enter time against the Design activity, first add the activity into your timecard. This can be done by either *clicking* on the empty cell beneath the Task heading and picking the task from the popup list, or by *clicking* on the task name from your task list. In either case, the selected task will be added to the timecard so that time can be posted against it.

Enter 8:00 hours against the design task on Monday, July 3rd by *clicking* in that cell and typing **8**, followed by a Tab key. Notice that the number 8.00 is added to the cell. Totals are automatically calculated at both the bottom of the timecard and in specific columns to the right. Also notice that the assignment bar in the task list has changed to represent the Baseline Planned dates (the white bar), the Actual Start and calculated Complete date (the colored bar), and the Percentage of the overall Plan which has been Progressed (the black bar within the colored bar).

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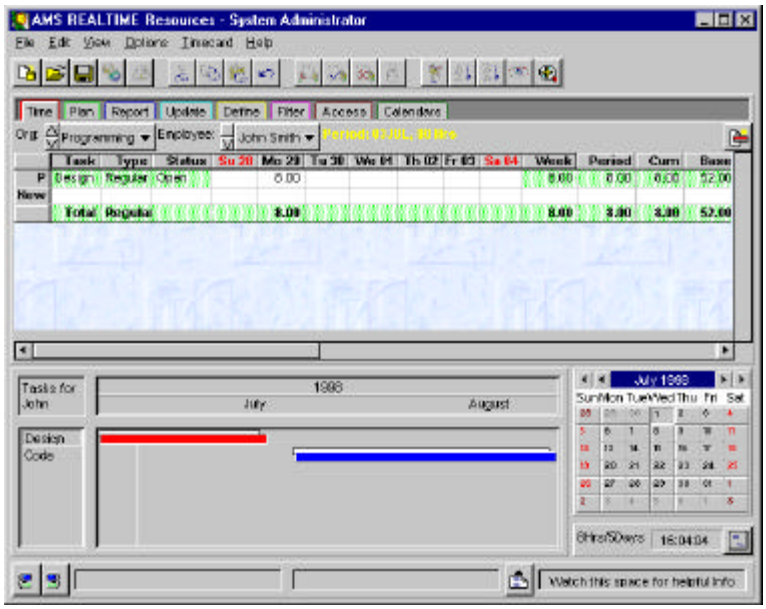
AMS REALTIME Resources - System Administrator
File Edit View Options Timecard Help
Time Plan Report Update Define Filter Access Calendars
Org: Programming
Employee: John Smith
Task Type Status Su 28 Mo 29 Tu 30 We 01 Th 02 Fr 03 Sa 04 Week Period Curr Base
Design Regular Open 6.00 6.00 6.00 52.00
Total Regular 8.00 8.00 8.00 8.00 52.00
Tasks for John
1998
July
August
Design
Code
July 1998
Sun Mon Tue Wed Thu Fri Sat
8Hrs/5Days
16:04:04
Watch this space for helpful info

Next, enter **75%** in Tuesday's cell, indicating that you worked on this task for 75% of your working day. Notice when you hit the Tab key, the 75% is replaced by the number 6.00 (6.00 = 75% of a standard 8.00 hour day). Also notice that totals, remaining hours, and completion dates were recalculated. The task bar was also adjusted in the task list to reflect the current status.

The bar now indicates twice as much progress, and the completion date is now earlier. This is because the two entries made so far (6.00 for Monday and 6.00 for Tuesday) represent an actual level of effort of 75% against a planned level of effort of 50%. The remaining work is, therefore, less than originally planned and can be completed earlier, even if the remaining work is accomplished on a 50% level of effort basis.

Skip over Wednesday and put **2:30** into Thursday's cell. When you hit the Tab key, you will notice that once again the 2:30 (two hours and thirty minutes) has changed to 2.5 and totals have also changed. Furthermore, the assignment bar has also been updated, showing that the completion date has now slipped. This is because by Thursday there should have been 4 hours expended each day (4 x 4 = 16), yet only 14.5 hours have been posted.

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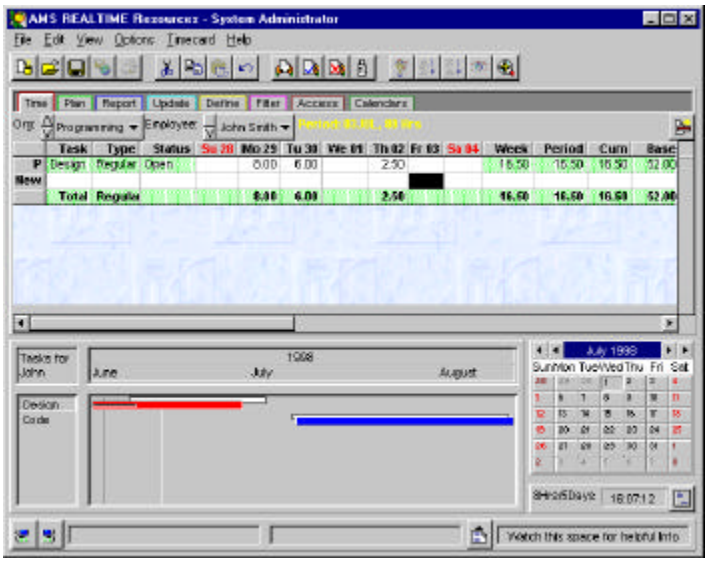
AMS REALTIME Resources - System Administrator
File Edit View Options Timecard Help
Time Plan Report Update Define Filter Access Calendars
Org: Programming Employee: John Smith
Task Type Status Su 28 Mo 29 Tu 30 We 01 Th 02 Fr 03 Sa 04 Week Period Cum Base
P Design Regular Open 6.00 6.00 2.50 16.50 16.50 16.50 52.00
New
Total Regular 6.00 6.00 2.50 16.50 16.50 16.50 52.00
Tasks for John
1998
June July August
Design
Code
July 1998
Sun Mon Tue Wed Thu Fri Sat
8Hrs/5Days 16.07.12
Watch this space for helpful info

Timecard after Thursday's Entry

To see another way of entering time, *click* in the column labeled as Week and enter 20 hours. This indicates that 20 hours were expended against that task for the entire week. Once the week total has been entered, it will replace the daily totals with an average hours per day (i.e., it will spread out the total over the working days).

Updating Estimates to Complete

Before leaving the timecard, it should be pointed out that not only can an employee enter actual hours worked, but can also change the estimate for the completion of the work. This allows the estimated completion date and other related information to be calculated.

Scroll the screen to the left using the right scroll arrow until Cum, Base, Rem, ETC, LOE, Start, and Complete are visible, if they are not already on the screen. These fields represent planning information and have the following meaning:

Field	Description
Cum	Cumulative Hours Reported (to Date)
Base	Baseline Hours (Original Plan)
Rem	Remaining Hours (Base - Cum)
ETC	Estimate to Complete (Set as Remaining Hours by default)
LOE	Level of Effort (Set to the Planned LOE) by default
Start	Planned or Actual Start Date
Complete	Calculated Complete date (Current Date + Rem * LOE)

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The planning information can be updated to reflect new anticipated performance by the employee. For example, if the LOE in increased in this case from 50% to 75%, then both the remaining time and the complete date will shift to the left (earlier in time) accordingly.

If the Estimate to Complete (ETC) is increased to 100 Hours, however, the complete date will shift to the right (later in time).

If the Complete date is moved to the 25th of July, the level of effort will increase, recalculating the level of effort required to complete the remaining 100 hours within the new time frame.

AMS REALTIME Resources is a powerful planning tool. Unlike other tools, it allows the employee to communicate back to the manager what he feels is left to do and how long it will take. If the answer is unacceptable, the manager can take action to effect a new plan based on this updated information.

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Entering Time for Another Employee

The first line of the timecard has a button with the organization description followed by another with the employee name. *Click* on the organization button (the one that says Information Systems) and a popup will appear showing the other organizations. Pick **Information Systems - Programs** from the list. The screen will change and you will see the first employee's timecard within the programming group with his task assignments displayed below.

Add **30** hours for the week for John Smith against the **Design** activity. *Hint*: *Click* on the word Design in the task list below to add it to the timecard. Then put 30 in the empty cell under the Week heading.

You can change employees by *clicking* on the employee name button and selecting from the popup list to enter time for another employee within the department. You can also move to another department by *clicking* on the organization button and choosing a new organization.

Whenever you move to a new time record, change employees, or move into another mode. AMS REALTIME Resources will ask if you wish to **Save the Plan** changes. Choose **Save** to keep the changes, and **Discard** to ignore them.

Important Note: Access to other organizations and employee timecards is determined by the current user's organizational hierarchy. A proxy may be specified to login and post time for a another user in the same hierarchical level without entering a password. See the ResProxy attribute in the section in Defining Datasets for more information.

Adding an Unplanned Activity

New Activity Icon

Let's assume that John Smith worked another task that was unplanned during the same week. To add that task to the timecard, *click* on the New Activity button and a dialog will appear for adding the new activity.

Add the new activity as specified below, and then *click* on the **OK** button at the bottom of the dialog. The activity will be added to the activity dataset, and it will also become an assignment for the current employee (John Smith).

Field	Value
Act ID	AB132
Description	Specification Rework
Start	03-JUL-98
Complete	07-JUL-98
Level	20%

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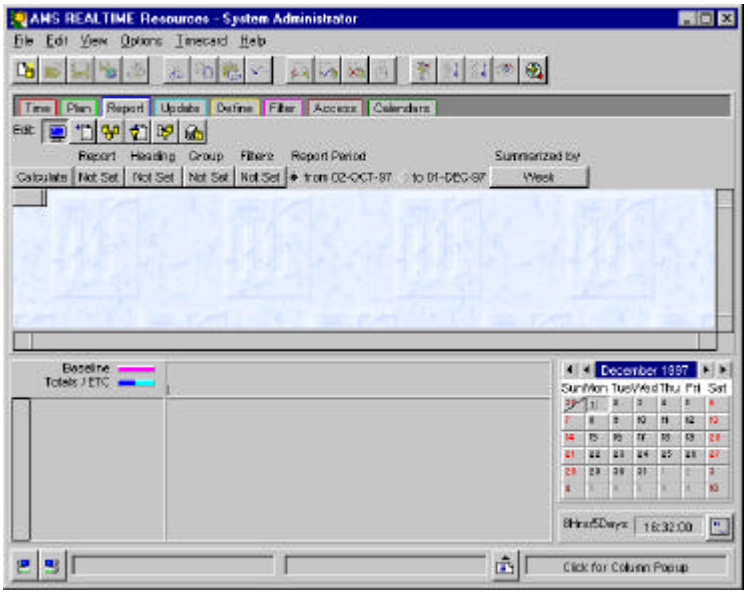
Notice that the new activity is automatically added to the timecard as well as the assignments list in the chart below. Report 10 hours worked on this task to the week column.

Return to the Information Systems Organization and select yourself as an employee.

Generating a Report

The last area we will cover in this introduction is generating Reports. AMS REALTIME Resources has a powerful report generating function that is accessed by *clicking* on the **Report** Tab. When you *click* on the Report Tab, the screen will change and an empty report screen will appear, as shown below:


AMS REALTIME Resources - System Administrator
File Edit View Options Timecard Help
Time Plan Report Update Define Filter Access Calendars
Edit
Report Heading Group Filters Report Period Summarized by
Calculate Not Set Not Set Not Set Not Set from 02-OCT-97 to 01-DEC-97 Week
Baseline
Totals / ETC
December 1997
Sun Mon Tue Wed Thu Fri Sat
8hrs/5Days 16:32:00
Click for Column Popup

Empty Report Screen

If this is the first time that you have gone into the report function, there will be no report criteria defined. You will notice that all of the Report buttons near the top of the screen (to the right of the Calculate button) say **Not Set**. These buttons control report name selected, report heading chosen, ordering and grouping of the data, and report filter(s) to be applied to data records to determine selection for inclusion in the report.

To keep the introduction to reports at a very basic level, we will start by looking only at the Groups. Select the **Edit Groups** table button, and the Group table will be displayed:

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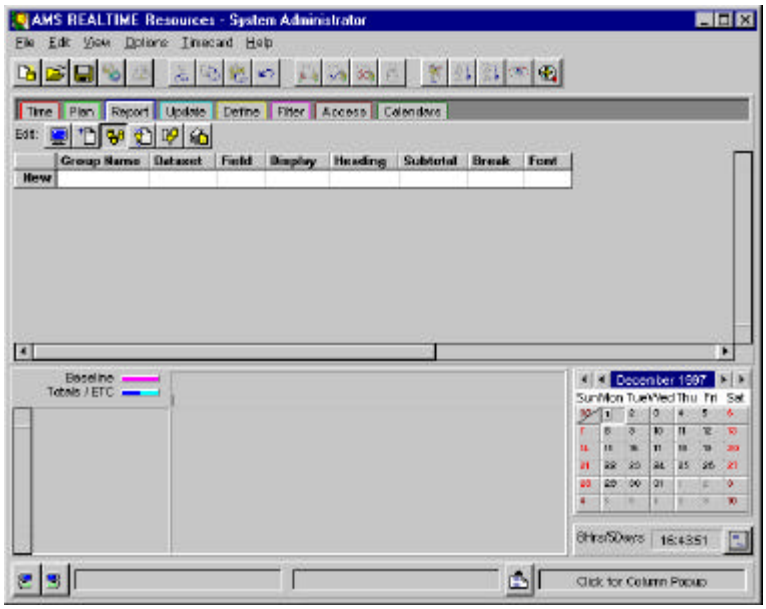
AMS REALTIME Resources - System Administrator
File Edit View Options Timecard Help
Time Plan Report Update Define Filter Access Calendars
Edit:
Group Name Dataset Field Display Heading Subtotal Break Font
New
Baseline
Totals / ETC
December 1997
Sun Mon Tue Wed Thu Fri Sat
Click for Column Popup

The Group Table for Reports

The table has the a number of fields defined. These fields have the following meaning:

Field	Meaning
Group Name	Name to be associated with the Group. This name is displayed in the Group button when selected and it displayed in a pop-up list of possible groups when the Group button is clicked on for selecting a new grouping.
Dataset	The dataset name that contains the field to be grouped on.
Field	The name of the field within the dataset to be used for sorting and grouping of the report data

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Field	Meaning *(continued...)*
Display	The name of the field to be displayed as a label for this grouping of data of other than the Field as defined above. For example you may want to group by Employee ID but display the Employee name rather than ID.
Heading	A heading from the heading table that can be displayed in the report if this field is a break field.
Subtotal	Determines if you want subtotals for this group. This can be either Before or After the break for the new group or it can be None meaning no group subtotals are to be calculated.
Break	Specifies a control break on this grouping. This can be A Line break (blank Line), a Page break (new page) or None (no break).

We are going to add a Group to the Group table so we can create a report. *Click* in the Group Name cell in the line labeled **New** to set the display cursor. Enter a group name called **By Employee**. When you hit the Tab key, you will get a popup of all the possible datasets which exist in your database. Pick **Employee**. The dataset cell will now contain the word Employee.

Click on the Field cell and a new popup of all Employee fields will appear in the Field column. Select **Name** from the popup. Choose the same field to go under **Display**. A font popup will follow, allowing you to choose a font for this information. If you don't want another font, just *click* off the popup menu to continue. This line now indicates that you want the information ordered by Employee Name.

Let's continue and group the data by activity within employee. Simply *click* in the empty cell under the Employee dataset entry and select **Activity** from the dataset popup. Move the cursor to the Field column within the same row, and *click* on the **Description** from the field popup. Select Description again under the Display heading. The group **By Employee** now means "order the data by employee with a secondary breakdown by activity."

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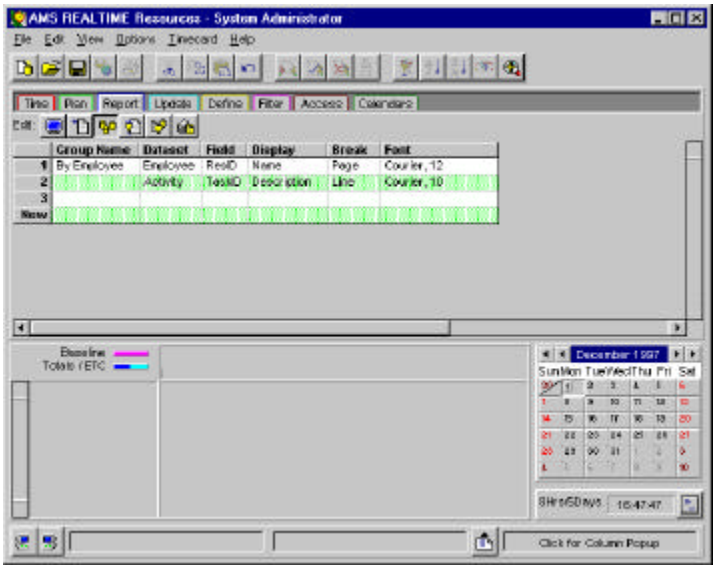
Your Group table should now look something like this:


AMS REALTIME Resources - System Administrator
File Edit View Options Timecard Help
Time Plan Report Update Define Filter Access Calendars
Edit
Group Name Dataset Field Display Break Font
1 By Employee Employee ResID Name Page Courier, 12
2 Activity TaskID Description Line Courier, 10
3
New
Click for Column Popup

Group table with By Employee added

Let's create another grouping so you can get another view of the data. Move the mouse to the Group Name column in the last line labeled New and enter **By Activity** in that cell. Then fill in the Dataset and Field for this and the next line, as indicated below. For the present, we will disregard the other columns. Select different font for each of the group records.

Group Name	**Dataset**	**Field**	**Display**
By Activity	Activity	Task ID	Description
	Employee	Login	Org Code

This group specifies that the report is to be ordered by Activity, and within that, by Employee. Note that while we are searching on the Task ID and Login, we are displaying the Description and the Org Code; not the field on which we searched.

Now *click* on the **Display** button on the **Edit** line above to return to the report display screen. Then *click* on the Group button that is currently labeled as Not Set. A popup of the group you just added to the Group table will now appear. Select the group name **By Employee**. Then *click* on the **Calculate** button to generate the report.

A report will appear that shows the planned and actual hours by Employee. Each employee's section of the report will be further broken down by each activity that employee reported hours against or was supposed to report hours against.

In the lower portion of the screen, you will also see a bar chart that indicates the hours planned versus actual hours worked and hours

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remaining. These will be ordered and totaled in accordance with the currently selected group.

Select the **By Activity** group by *clicking* on the **Group** button and picking the By Activity group. Then **Calculate** the report again by clicking on the Calculate button. The report will be redisplayed, but this time it will be by activity and within that, by employee.

Exiting AMS REALTIME Resources

This concludes the Introduction to AMS REALTIME Resources. Exit the AMS REALTIME Resources by selecting the **Exit** item from the **File** menu. You will be asked if you want to save the new database; select Save so that you can return to your sample later.

This brief introduction has helped you learn how to start AMS REALTIME Resources, edit the database, plan work, post actual hours, and generate simple reports. The remainder of this manual is organized as a reference manual and goes through each function in more detail.

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Program Menus

Program Line

The very top line of the AMS REALTIME Resources window displays the name of the user which is currently logged on to the AMS REALTIME Resources system.

The upper left corner contains the Close Box. When running AMS REALTIME Resources on the Windows 3.1 platform, *clicking* on the close box produces a menu with window sizing options, the program Close option, the Switch To option (to leave AMS REALTIME Resources running and switch to other active applications), and the About option. *Clicking* on About provides information about AMS REALTIME Resources.

Double-clicking on the Close Box will Exit the AMS REALTIME Resources program. If you have made changes without saving, AMS REALTIME Resources will ask you if you want to **Save Timecard Changes** before Exiting the program. The available response options are Save, Discard or Cancel.

Pulldown Menus

The next line of the window contains File, Edit, View, Options, Timecard and Help pulldown menus. Many menu options have menu accelerators which provide direct keyboard access to the menu options. If an accelerator is available, it will be listed at the right side of the menu option. The Ctrl key is indicated with a caret (^). For example, the accelerator for Save is **^S**, which means that holding down the **Ctrl** key and pressing the **S** key will save the current local dataset. There is no need to Save if you are a client accessing a server dataset.

Each menu option also has a hotkey character, which is underlined. To access the menus directly from the keyboard, hold down the Alt key and press the hotkey character of the desired menu. For example, to access the File menu, hold down the **Alt** key and press the **F** key. Then press the **S** key to perform the save process.

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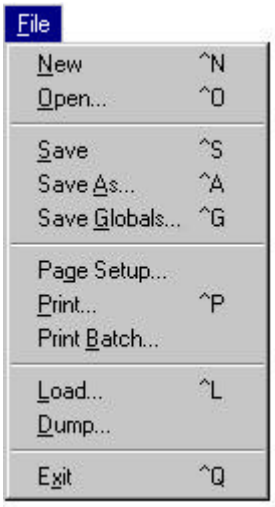
File



The File Menu

New

The New menu item is not currently used, but is maintained for system conformance on some platforms as well as future use.

Open

The Open menu allows the user to select and open another local dataset. A file selector dialog allows the user to browse the directory list. If changes have been made to the current database, the user will be prompted to save before opening the new database.

Save

If a local dataset is being used, selecting the **Save** option will force the current data to be written back to the dataset. When accessing the server dataset, the server determines when a save is required, either because the record changed and a set time period has elapsed, or because the user is logging out.

Save as

Save as allows you to save a local dataset to new dataset file. The Save menu options apply only to local datasets, rather than to datasets which are stored on the server and accessed by clients.

Save Globals

Save Globals allows you to save global reports, views, etc., back to the global preference file (provided that you have been granted the appropriate access rights).

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Page Setup

The **Page Setup** allows selection of a Printer Device, Page Orientation, and other printer options. AMS REALTIME Resources accesses your system to determine which printers have been installed, and uses the system printer drivers. No additional printer setup or configuration is required.

Print

Print takes the data from the current AMS REALTIME Resources mode and sends it to the currently selected Print device. If you are in a table format, such as in Update mode or Define mode, the output will be a spreadsheet-style column formatted data table with headings. Column and Row lines can be switched On or Off under the View menu. If you are in Report mode, the current Heading table fields will also print at the top of your report.

The Print dialog provides options to print all the data, the current selection, or a range of pages. You can also set other printer options, such as the DPI resolution, printer destination (the connected print device or a filename), and the number of copies desired, depending on the available options of the selected printer. To print multiple copies, change the number in Copies: box from 1 to the number of copies desired. If Collate Copies is checked, each table or report will print completely before the next copy begins.

Print Batch

Print Batch will print a series of report specifications which have been setup in a Batch List in the Report screen. Once the process has been setup and initiated, further user interaction is not required from AMS REALTIME Resources. Make sure the printer's paper supply is adequate!

Load

The **Load** option allows you to load the current table from a text file. The ASCII text file must be comma, space or tab delimited with headings that match the field names. The table order does not have to match the order of the fields, since the headings are used to determine the data mapping.

All data is appended at the end of the dataset unless a key field is specified. To specify a key field, select that field by following the procedure to lock that field: *double-click* on the field heading. Records with matching key field data will automatically update the existing information. If no key field match is found, those records are simply appended.

It is crucial to ensure that all data records have unique key fields when multiple projects are being loaded into the AMS REALTIME Resources database. This will ensure that new data that is being loaded will not conflict with the existing data. Refer to the section on Defining a Database for more information about key fields.

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Dump

The **Dump** option allows you to export the current table information into a comma, space or tab delimited text file. The resultant text file will have a heading line which contains each field name. The text file will contain only those fields which are visible in the current table order.

Dumping data from the Time mode will result in a delimited dump of the actuals data that can be loaded into the AMS REALTIME Projects Usage table. The current user must have the correct access rights to enable this feature.

Exit

The **Exit** option will quit the AMS REALTIME Resources program. If you have made changes to the data without saving, AMS REALTIME Resources will ask you if you want to Save Timecard Changes before Exiting the program. The available response options are Save, Discard or Cancel. *Note: The Exit option is labeled **Quit** on Macintosh platforms to conform to the platform standard.*

Edit Menu

Undo

Cut
Copy
Paste
Paste Link
Clear

Insert Row
Delete Row

Select All

Fill Down
Fill Right

The Edit menu contains the standard editing functions: **Undo**, **Cut**, **Copy**, **Paste, Clear** and **Select All**. Windows versions of AMS REALTIME Resources also include **Paste Link** for DDE integration.

Using **Cut** on selected data will copy the data into the system paste buffer and delete the original selection. Using **Copy** on the selected data will copy the data into the system paste buffer, but leave the original selection intact. If these menu options are grayed out, there is no text selected. *Click* and *drag* the mouse over the text you want. Then select Cut or Copy.

The **Paste** option will become active when there is something in the paste buffer. Once you have Cut or Copied text, selecting Paste will insert the text from the paste buffer to the current cursor position. If you have selected text, the text in the paste buffer will overwrite the selected text. The **Paste Link** option is used for DDE.

Clear will remove the contents of the selected fields, but will not copy the contents into the paste buffer.

Delete Row and **Insert Row** act upon the row selection. If one or more lines are selected, Delete Row will remove the lines, provided that they are not referenced by other records in other tables. Insert Row is not always available in certain tables, but new data can always be sorted into the correct order.

Select All selects every field of every record in the current table.

The **Fill Down** and **Fill Right** commands take the topmost or leftmost cell contents and copy it down or right (respectively) into the remainder of the selected cells.

View Menu

Sort Up
Sort Down
Select Filter

Auto Resize
Select View…
Save View as…
Save View
Delete View…
Rename View…

Column Lines
Row Lines
LockLayout

The first item on the View Menu is **Select Filter**. Selecting this option provides you with a popup of the filters which have been defined form the current dataset. If filters have not been defined, nothing will happen.

Once a filter has been selected, it will apply the stored sorting and matching criteria to the current data table. To clear a filter, bring up filter popup and *click* outside of the popup (without selecting a new filter). This will remove the current filter and restore the dataset to its natural order.

Auto Resize will reset the column widths to the maximum size of their current field contents. The column width will be at least as wide as the heading, even if the field contains no data records. For example, if a 50 character alpha field called Customer contains several records, and the longest of those is 20 characters long, the column will resize to about 20 characters in width. If there are no Customer records, the column will become just wide enough to display Customer at the top of the column.

Select View allows you to chose a view name from a popup list of stored views. A view "remembers" and resets the table field

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information: what fields are visible, the order of those fields, the size of the columns and the fields that were locked, if any. The Calendar area layout is not saved with the view information.

If no views have been saved for the current dataset or screen mode, only the **Save View as** menu option will be available from the view section. Once a view has been saved, the other View options will no longer be grayed out. To save the current screen layout, *click* on **Save View as** and enter the new view name at the prompt.

To save and update the current view, *click* on **Save View**. This will automatically update the active view to the current screen layout.

To remove a view, *click* on **Delete View**. A popup will appear, allowing you to select a view for deletion.

To rename a view, select **Rename View** from the menu. A popup will appear, allowing you to select the view you wish to rename. The old name appears in a dialog, allow you to edit it to a new name. *Click* on OK when you have finished editing, or Cancel to quit without making changes.

Column Lines and **Row Lines** will have a check next to the menu item if they are turned on. These menu switches control the display of lines between the rows and columns on the screen display and on printed output.

Turning on **Lock Layout** will not allow the columns to be moved or resized. Closed columns can not be opened. If the layout is locked, a check will appear next to the menu item, and the cursor will not change to the flat hand or the pointing finger when it is positioned over the column headings.

Options Menu

Login as…
Change Password

Recalculate

Network Test…
Memory Check…

Login as

If employees are required to share a computer for AMS REALTIME Resources access, this option can be used to Login to AMS REALTIME Resources under another User ID without exiting and restarting the program. *Clicking* on **Login As** will log out the current user and produce the Login and Password prompts. However, if another employee is not waiting to log time, users should always exit the program to protect their time records.

Change Password

This menu option allows the currently logged in user to change their password. A dialog will provide successive prompts for:

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Old Password

New Password

Confirm Password

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The actual password not displayed on the screen; each character is replaced with an asterisk for the display to help ensure privacy. *Passwords should never be shared or given to other employees to protect your timecard entries*. If a password is forgotten, it can be reset by the System Administrator.

Recalculate

All calculated fields (both system fields and user-defined fields) will be recalculated when this is selected, ensuring that all data is current, even if fields are calculated from data in other tables.

Network Test

The **Network Test** provides a method for the users with sufficient access level privileges to verify that the network connection is up and running. *Clicking* on **Network Test** will provide information to verify that the connection exists and that the client can talk to the server, and vice versa.

Memory Check

Memory information can be written to a report periodically with this option to help trace memory usage. To create a text file report of this data, add REPORT=MEMORY.TXT to the configuration file. Each time **Memory Check** is selected, an **about** dialog will appear, allowing you to type in a text identifier (such as the time or a step number). The current memory usage will be appended to the text report. This text identifier will appear after the keyword TAG and a reference number for the memory check. The memory information is displayed with the same reference number, but the keyword CLASS, an internal program function , the number of bytes used and number of objects.

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Timecard Menu

Submit
Approve
Reject

Close

Submit

Employees can select timecard entries (*click and drag* to select cells) and choose Submit from the Timecard menu. The submitted time entries will have a yellow background, which indicates that they have been submitted.

All users have the ability to submit records. If the **Approved** configuration switch is set to Y, only approved time records are exported as actuals. If this switch is set to N, the approval process is ignored, and all time records will be exported as actuals.

Approve

When a manager reviews the timecards for each of his employees, he must make a determination as to whether the reported time is acceptable. Groups of cells which are selected will receive a green background when Approve is chosen from the Timecard menu. This indicates to the timecard owner that those timecard entries have been approved.

Access to both the Approve and Reject option is specified by the Access level which is given to each user. If the **Approved** configuration switch is set to Y, only the approved time records are exported as actuals. If this switch is set to N, the approval process is ignored, and all time records will be exported as actuals.

Reject

When a manager reviews the timecards for each of his employees, he must make a determination as to whether the reported time is acceptable. Groups of cells which are selected will receive a red background when Reject is chosen from the Timecard menu. This indicates to the timecard owner that the rejected timecard entries are not acceptable, and must be changed and resubmitted.

Access to both the Approve and Reject option is specified by the Access level which is given to each user. If the **Approved** configuration switch is set to Y, rejected records will not be exported as actuals. If this switch is set to N, the approval process is ignored, and all time records will be exported as actuals.

To edit a rejected record, the rejected status must first be cleared by selecting the rejected cell and changing the approval status. A manager can simply toggle the Reject status by selecting the cell and *clicking* on Reject. A user without access rights to Approve and Reject can select a rejected cell, reset it to Submitted status, and then

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toggle the Submitted status off. Once the approval status has been removed, the cell contents can be edited.

Close

Close allows a manager to disallow an employee to post further timecard entries or make timecard changes on a completed task. To close one or more tasks when reviewing an employee timecard, select the task in the Time screen and select Close from the Timecard menu.

The Open/Closed status for each Workplan record can also be set in the Plan screen under the status column.

Access to the Close option is determined by the user's Timecard Access level.

Help

The Help menu provides access to the on-line Help program, which contains documentation and samples. The Help menu also contains an About option, which provides information about the software version and its authors.

Function Tabs

The next screen line provides a list of AMS REALTIME Resources functions. The screen layout and will change to reflect the specific processing options for each function. For example, the Update, Define, and Filter functions produce a list of dataset selection buttons along the left side of the screen. When a dataset has been selected, the screen will display the appropriate table fields for that dataset.

If you are in Update mode, the data in the currently selected dataset will be displayed in a spreadsheet-style table format. Update mode allows you to enter or edit data in the currently selected dataset. A user's designated Access Level controls how he can access the data. For example, Joe Smith might not even be able to look at the data, while Rita Redstone can look at the data, but not make changes. Jane Doe, however, might be able to edit the data, while Fred Jones can also change the dataset definitions.

If you are in Define mode, the dataset definitions will be displayed for each field. If you are in Filter mode, the current list of filter criteria settings will be displayed. Again, a user's designated Access Level will control how the data is accessed.

The default mode is Time, which allows employees to post their hours worked. The Time screen will be accessed by all users. Available modes are defined by each user's Access Level, which is assigned by the System Administrator.

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Time

When an employee logs into AMS REALTIME Resources, the Time entry screen will default to that specific user name. Unless the employee has the privilege necessary to access the timesheet of another user, only the currently logged in employee's planned activities will be available for time reporting.

Posting Time

To report time worked, *click* in the first column, which is labeled **Task**. A popup list of assigned tasks will appear in the column. Select a task that you worked on by *clicking* on the task with the mouse. The task will then appear on the first unused line of the timecard screen.

Note: The actual contents of the Task popup can be any Activity field. Since an Activity field can be comprised of other fields or portions of fields, the information displayed in the Task popup is highly configurable. The Activity field which will be used for the Task popup is determined by the ***TaskPick*** *Attributes code in the dataset definition.*

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Once a task is selected, many of the timecard fields will contain information for that task:

Heading	Description
Period	The Period contains the current Period-to-Date actual totals.
Cum	The Cumulative contains the total hours already worked on the task.
Base	The Baseline contains the number of hours that the employee was planned to work on the task.
Rem	The Remaining contains the number of hours which are remaining on the task.
ETC	The ETC contains the employee's estimate of how many hours are remaining on the task. This is used to calculate the Progress and the Estimated Completed Date for each task in AMS REALTIME Projects.
LOE	The Level-of-Effort is the percentage of time that an employee is planned to work on the task.
Start	The Start Date contains the planned start date of the task.
Comp	The Complete Date contains the planned completion date for the task.

Basic Timecard Fields

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Some fields, such as the date fields, ETC, and LOE, can be modified by the user to communicate changes in the work which is being done on the task. For example, if the 100 hours of work were planned on a task, and 60 have been completed, 40 hours will be show as remaining. However, perhaps unexpected progress has been accomplished, and the employee now expects that the task can be completed in 20 hours. By editing the ETC field from 40 to 20, the employee can communicate that information directly into the calculated progress field for that activity. If more than one employee works on a task, each employee will contribute his portion of the work and his own ETC toward the overall activity progress.

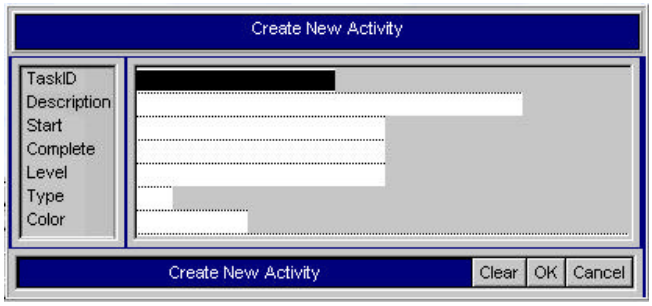
Likewise, an employee's ETC may be extended, indicating that unexpected complications have arisen and the task will not be completed on the planned completion date. In this case, the activity's calculated progress would be decreased according to the new percentage of that employee's contribution toward the whole task workload.

Unplanned Work

There may be times when an employee has worked on a task for which he was not originally planned. Ideally, the manager (or whoever does the planning) could go back to Plan mode and add this employee to the planned work for the activity. However, this may not always be possible or applicable.

AMS REALTIME Resources has several methods to handle unplanned work. One method is to allow employees to use the New Activity button to add a new task and automatically add themselves to the work plan. Then the task will appear on the employee's task list.

Access to the New Activity button is configurable in the Access table. Each user's defined Access Level will determine whether or not the New Activity button will be present. This button can also be used when an employee wishes to track non-project time spent that is not of general interest to management, such as activities used to track personal time management goals.



Adding New Activities

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Another method is also configurable in the Access table. When a "drill down" filter is created for the Activity dataset that filter is specified in the Timecard access code, the **Find Existing...** option will be appended to the end of the user's task list. Selecting **Find Existing...** allows a user to select a new task by choosing categories from successive popups down to the detail task level, whether they are planned to work on that task or not. For example, the user could select a task by first selecting the Project, then the Phase, and then the Task description from popup lists. Even if he was not planned to work on that task, he could then post his time. Of course, unplanned work can still be subjected to the Approval process for validation.

Alternatively, WBS source tables can be defined which allow hierarchical task selection through a series of pre-defined choices.

Plan

Plan mode is typically used by managers when determining which employees will be assigned to work on each task. The employee must be part of the planned work on a task in order for that Task ID to appear in their popup when posting time worked. If the Plan function is grayed out, then the currently logged in user does not have the required access level to plan work.

Note: If Planning and Resource assignments have already been created in AMS REALTIME Projects, this plan information can be automatically loaded using the AMS REALTIME Resources interface. This information exchange is launched from the AMS REALTIME Projects File Execute menu.

When Plan is selected, the information line will now display **Work Planned on** followed by a Task ID button. *Clicking* on the Task ID button will produce a list of activities which are currently in the Activity dataset. To change the task selection, *click* on the desired activity. The current activity selection will always be displayed in the TaskID button.

The information line also provides a **Previous** and **Next** button. *Clicking* on the Previous button will select the previous activity for planning, and *clicking* on the Next button will move you to the next activity in the list for planning. Using these buttons to perform resource planning on a series of activities helps to ensure that no tasks are inadvertently passed over.

The last button is labeled **Activity Filter**, and allows selection of a predefined Activity matching filter. Selecting an activity filter allows you to limit what appears in the popup by showing only those that match the specific criteria from the filter. The current activity filter is always displayed in the Activity Filter button.

Resource Availability

When planning the resource assignments for activities, a list of resources will appear below next to the calendar. If the configuration switch **Planavail** is set to Y, each resource will have

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an associated shaded bar which displays its availability profile. The bars are color coded: blue indicates availability, white indicates full utilization, and red indicates overcommitment. The shading indicates the degree of the availability status. For example, a light shaded red indicates that the resource is slightly overcommitted, while solid blue indicates that the resource is fully available. This provides a planner with visual information to assist in resource scheduling and workload leveling.

Viewing Overall Assignments for a Resource

When you have resources assigned to a task, you can immediately see all the other tasks to which a resource is assigned by *clicking* on the resource name. The availability profile in the lower portion of the screen will instantly change to a Gantt chart view of all tasks to which that employee has been assigned. This allows you to see exactly what else the employee is planned to work on if a conflict exists.

For example, Engineer A is assigned to engineering task by a Resource Planner. The availability profile for Engineer A went from white to red, indicating that he is now overcommitted. When the Resource Planner *clicks* on Engineer A's name in the plan record, the task schedule for Engineer A will appear on the bottom of the screen, replacing the availability profile. The Resource Planner can then immediately identify the other tasks which are competing for Engineer A to determine which of the tasks are more important. The Planner can now either choose to reassign one of the other tasks, change the percentage of time Engineer A is allocated to the task, or delete Engineer A from the planned resources for this task and replace him with another engineer.

To change back from the currently selected employee's task schedule, *click* on the employee to deselect. The task list will be replaced by the overall availability profile.

Using Skill Codes

The database can be defined to allow activity requirements and resource capabilities to be matched. If a field (**Skills** is used in the samples below) is added to the Employee dataset that will hold one or more skill codes for each resource, two methods for Skill filtering become available.

The first method is to create an Employee filter that selects a subset of the skill codes. For example, if you want to see only the C Programmers, you could create an Employee filter where the criteria under **Skills** was ***CPROG***. Any resource filter can be selected in Plan mode by double-clicking on the heading at the top of the Resource list. A popup will appear, containing all the Employee filters that have been created. Selecting an Employee filter will apply it, so that only the resources that meet the filter criteria will be available for planning.

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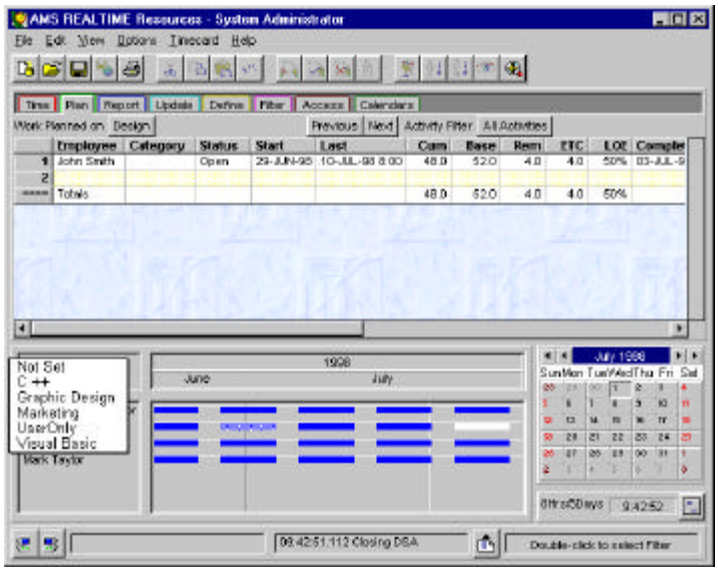

Applying Resource Filters in Plan Mode

The second method is to create a filter for the activity that contains the skill set needed for the task. To use this method, add a field to the Activity dataset, such as **LaborFilter**, that has the Attribute of **TaskResFilter**.

The **LaborFilter** field must contain a Filter name, such as **ProgrammingTeam**. The contents of this field specifies a filter which contains a skill set for the task, which is defined with matching criteria. When an activity is selected for Planning, AMS REALTIME Resources will automatically filter the resource list to only those employees which meet the required skill set.

In the Employee dataset, the Skills field should contain a code which describes a skill, and possibly a level of proficiency as well. Employees can have multiple skill codes listed in this field.

More information about using Skill Codes can be found in the *Planning Work* section of this manual.

Report

Report mode allows you to output selected information which has been collected in the database. While some standard reports are provided, you can create as many additional reports as are required. Reports can be selected from a standard list of saved selection criteria, or can also be easily created on an ad-hoc basis.

If the Report function is grayed out on the list of AMS REALTIME Resources functions near the top of your screen, the current user does not have the appropriate Access Level to create reports.

When Report is selected, the information line displays **Edit:**, followed by **Display**, **Headings**, **Groups**, **Filters**, **Specifications** and **Batch List**.

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Display

Display shows the current report settings. When Display is selected, a line of buttons across the bottom of the information line will appear. All buttons are labeled across the top with the exception of the first button, which is Calculate. The remainder of the report buttons all allow for selection of some type of report criteria.

Calculate button

Clicking on **Calculate** will search the database for all records that meet the specified criteria (this includes Headings, Groups and Specifications). If any of the report criteria has changed, the report shown in the window will not update until the Calculate button is depressed. This provides the user with the opportunity to complete all of the report specifications before the database is searched.

Report button

The **Report** button contains the current Report name. *Clicking* on the **Report** button will provide a popup of all report names which have been defined in the Specifications table, which is described later in this section.

AMS REALTIME Resources does not prevent a user from modifying an existing report. For example, suppose a regular monthly report called JON_REP collected actual hours sorted by a Job Order Number using weekly collection periods. If a more detailed breakdown was required, the JON_REP report could be selected and the summarization period could be changed to daily bins.

If desired, this new report could then be saved. To save a new or modified report, *click* on the Report button and select Save Report from the bottom of the popup. Then provide a new report name at the prompt. The new report name, along with all of its specifications, will then appear in the Specifications table.

Heading button

The **Heading** button contains the current Heading name. *Clicking* on the **Heading** button will provide a popup list of all the Heading names which have been defined in the Headings table. Selecting a Heading name from the list will determine which heading is used for the report. An upper left, top center and upper right value can be selected for each heading. These values can be fields, which are chosen from a popup and are replaced with the appropriate information when the report generates, or they can also be text strings that never change from report to report.

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Group button

The **Group** button contains the current Group name. *Clicking* on the **Group** button will provide a popup list of all the Group names which have been defined in the Groups table. Selecting a Group name from the list will determine the order in which the information is collected and grouped in the report. For example, a Group called EMPACT might use a major grouping by employee and a minor grouping underneath for each task the employee is working on.

Group names can select information for the report by matching on one field, but display the contents of another field. Headings, subtotal specifications, and line or page breaks can also be selected and stored with the Group name.

Filters button

The **Filters** button contains the current Filter Set name. *Clicking* on the **Filters** button will provide a popup list of all the Filter Set names which have been defined in the Filters table. The Filters table is comprised of a series filters for selected datasets. Each filter in the Filter Set will be applied to the report output.

Report Period

The **Report Period** specifies the boundaries of data collection from the database. The first date is the beginning report boundary, and the second is the ending report boundary.

To change the report period, first *click* on the button in front of the date. Then use the Calendar to select a new date by *clicking* on the new report boundary. Change the other Report Period date in the same manner.

Use the Up and Down arrows to the left of the current calendar month label to move the calendar Backward and Forward a month, respectively. Use the Left and Right arrows to the right of the current calendar month label to move Backward and Forward a year, respectively. *Click* on the current calendar month label to get a popup list of months. Selecting a month from the popup will move directly to that month, but retain the current year.

Summarized by

Click on the **Summarized by** button to select the bin size for collecting time from the database. The Bin options are Day, Week, Month, Quarter, Half (Year), and Year.

Headings

Clicking on the **Headings** button provides access to the Headings table. The Headings table allows you to define specific report heading formats. Once a Heading name has been defined, only the

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name has to be selected in order for all of the components to appear in the report. A Heading can have multiple lines.

To create a Heading, type a Heading name next to the word **New** in the Heading Name column. This Heading name will appear in the popup when you use the Heading button to select a report heading, so the name shouldn't be too long.

On the same line, *click* under the column labeled **Left**. A popup will appear with several field names to choose from, such as ^Heading (the Heading name), ^Title (the Report name), ^Page (the current page number or the report), ^From and ^To (the Report Period dates), and many more. *Click* on any field name to select it for that heading position. Do the same for the **Center** and **Right** columns.

To enter a text string instead of picking a field name from the popup, hold down the **Ctrl** key and *click*. A cursor will appear in place of the popup. Type the text string for display.

A blank line will always be displayed at the bottom of each heading. As soon as that line is occupied, a new line will appear. You can use as many lines as you need for the report Heading, but take care that you don't go overboard and make the Heading bigger than the body of the report.

Groups

Clicking on the **Groups** button will provide access to the Groups table. This table lets you define how the report information will be grouped, or ordered.

To create a Group, type a Group name next to the word **New** in the Group Name column. This Group name will appear in the popup when you use the Group button to select a report grouping, so the name shouldn't be too long (the actual limit will depend on the defaultfont size specified in your configuration file).

On the same line, *click* under the column labeled **Dataset.** A popup will appear that contains all the dataset names that have been defined in your AMS REALTIME Resources database. Choose the dataset that contains the primary report grouping.

Still on the same line, *click* under the column labeled **Field.** A popup will appear that contains all the field names in the dataset. Select the field that will be used as the primary search field for reporting. This field will be used as the internal search criteria, but does not have to be displayed in the report.

In the next column, *click* under the column labeled **Display**. The selected field is the field which will be displayed in the report. For example, perhaps the employee number is the field which is used for the internal search for actual time records, but the employee last name is the information that is printed in the report. The Field column would contain employee number and the Display column would contain the last name field.

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A **Heading** name (which must be predefined in the Headings table) can be supplied for each Grouping. To select a Heading name, *click* under the Heading column and select a Heading name from the popup.

If desired, Subtotals can be included with selected report groupings. To have the report calculate subtotals, *click* under the **Subtotal** column and select **None**, **Before** or **After**. Selecting Before will place the subtotal for that group on the same line (before any lower groups are displayed). Selecting After will produce a subtotal for the group after any subsequent lower groups.

The last column, labeled **Break**, is used to determine how the groups are separated: with a line break, a page break, or not at all. Selecting **None** keeps the report lines together, with no separation. Selecting **Line** will force a blank line between each group. Selecting **Page** will force a page break (including a new heading) between each group. Each line within a group can have its own Break selection.

Filters

The **Filters** table allows you to define a combination of one or more filters which will be used to sort and filter the report data. If Each set of filters should be given an identifying name under the Filter Set column.

Select a dataset, and then select one of the filters which has been defined for the dataset. As each line of the Filter Set is used, a new line is added. This allows combinations of several different filters to be applied, either from the same dataset or from different datasets.

Specifications

The Report **Specifications** table allows you to type in everything from the Report Display screen (where it is accessed and displayed on the buttons) and save it as a Report name.

By entering the name of the Report under Title, and entering a Heading name, Group name, Binsize (Summarized by), From and To date (of the Report Period), Activity Filter, Employee Filter and Organization Filter, you get exactly the same report as if you had entered the information from the Display screen and saved the Report name as the Title. However, you can also specify and save a View name, which has to be selected from the View menu when the Report Display is used.

Batch List

The Batch List lets you create lists of report specification names to be batch printed. To start a Batch Print process, select **Print Batch** from the File menu. A popup will appear which contains all the Batch Lists which have been defined. When the Batch List is selected, the entire series of report specifications will be automatically printed.

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Update

Update mode allows you to enter, edit and view the data in each dataset. When Update is selected, the names of all the datasets which have been defined will appear on the left side of the screen.

To access the data, select the name of a dataset. A spreadsheet-style table will appear with the field names shown at the top of each column. If there are too many data columns or records to fit in the window, scroll bars will appear. *Clicking* on the scroll bars will shift the table and allow you to shift the window and access the rest of the data.

Double-clicking on a column heading will cause that column, (and all columns to the left) to scroll lock. A darker border around those columns indicates that they are locked. This means that when the scroll bars are moved, the remaining columns to the right will shift and scroll, but the locked columns will remain fixed. Use this feature to keep a key field reference on the screen when viewing long rows of data.

Columns can be moved and resized. To move a column, position the cursor over the field name (heading). When the cursor is a flat hand, *click* and drag the column to its new position. To resize a column, position the cursor on the right edge of the field name (heading). When the cursor is a pointing finger, *click* and drag the column edge to its new size.

Re-sizing down to nothing will put away the column, so the data will not be visible. *Clicking* in the white space to the right of the displayed columns will produce a popup of all non-displayed columns. Selecting a field from the list will add that field to the end of the currently displayed table.

If the dataset is empty, a blank line will appear. When data is entered, a new line will appear, so there will always be a blank line for appending new data. Edit commands, such as the Cut, Copy, Paste, Fill Down, Fill Right and Paste Link can be used to edit the data. File commands, such as Load and Dump, can also be used to transfer data stored in tab delimited text files in and out of each AMS REALTIME Resources dataset.

Key Fields

Each dataset contains fields that hold key pieces of information that are used by AMS REALTIME Resources for a specific purpose. These fields can be identified by Attribute codes which are displayed next to their definitions. It is important to ensure that these fields are populated with valid data, since AMS REALTIME Resources uses these fields to make calculations.

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Activity Dataset

The required key fields in the standard Activity dataset are:

Field Name	Description	Attributes
TaskID	a unique activity identifier	Task ID
Description	the task identifier that is displayed in the popup	TaskPick
Start	starting date of the task	TaskStart
Complete	completion date of the task	TaskComp
Level	the default level-of-effort	TaskLevel
Type	the type of activity: project or non-project	TaskType
Color	color number : pattern number for the task bar	TaskColor
Filename	the filename used for transaction file dumps	TaskFile

An optional key field in the standard Activity dataset is:

Field Name	Description	Attributes
Labor Filter	*SkillCode* used to filter employee availability profiles in Plan mode	TaskResFilter

Employee Dataset

The required key fields in the standard Employee dataset are:

Field Name	Description	Attributes
ResID	a unique employee ID	ResID
	the organization code of the employee* (this can be a reference field from the Organization dataset or an Alpha text field)	ResOrg
Name	the employee identifier which appears in the popup	ResPick, ResLabel
Login	the employee's Login ID	ResLogin

*If desired, the OrgCode field can hold a coded string which is used to establish an organizational hierarchy. The coding works like a fixed length OBS (Organizational Breakdown Structure) code, which has no separating decimals and is padded to the right with zeros when a higher organizational level applies. The zeros are

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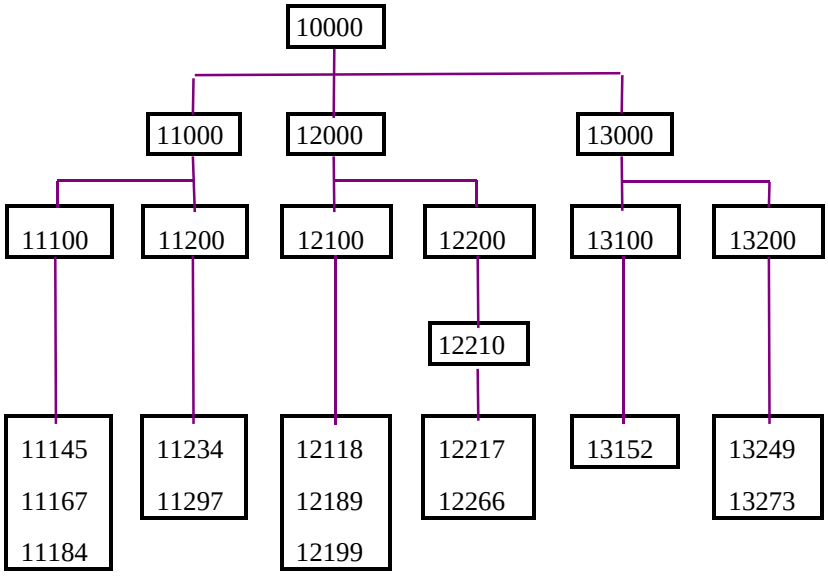
treated as wildcard digits, so that an employee that had zeros in the last two digits of his OrgCode number could access other employee records provided that the remaining OrgCode digits matched.

Consider the sample below, where each box in the OBS chart contains the number stored in the OrgCode. In this sample, the top row would have access to all employee information below.



A Sample OrgCode Hierarchy Diagram

The optional key field in the standard Employee dataset is:

Field Name	Description	Attributes
Skills	a list of skill codes which can be used to match the skill code used in an activity LaborFilter	*(none)*

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Organization Dataset

The required key fields in the standard Organization dataset are:

Field Name	Description	Attributes
Title	the organization title, which will appear in the popup	DeptPick
Code	a list of all possible OrgCodes	DeptOrg

Define Mode

Selecting **Define** also produces a list of the datasets on the left side of the screen. When a dataset name is selected, its field definitions are shown. This is where the field names and their data types are defined.

Each dataset must be initially defined before data can be entered. You can either start from scratch and create a new dataset, or you can copy and modify the sample dataset provided.

To start a dataset from scratch, start AMS REALTIME Resources with no dataset specified in the configuration file. You can do this by opening the client configuration file (*rtr32.ini* or *rtr.cfg*) and inserting a semicolon before the **dset** parameter so that it is ignored. The **dset** parameter can later specify the default dataset to open locally if a AMS REALTIME Resources Server address is not specified (the preference file can also store this information).

If AMS REALTIME Resources doesn't have a specified dataset, it will prompt you to **Find** or **Create** a dataset, or Quit the program. **Find** will let you select an existing dataset, and **Create** will allow you to name a new dataset.

If you want to modify the sample dataset, you can either copy the **sample.dst** file to a new dataset filename (maintain the **.dst** extension), or you can open the sample dataset and use **Save as** to copy it to a new dataset name.

The fields which are required by AMS REALTIME Resources are included in the basic dataset. Each of those fields has an Attributes keyword. These keywords are fixed and cannot be changed. Since the keyword determines what each field represents to AMS REALTIME Resources, the actual field names could be changed. However, we do not recommended that these fields be altered without a thorough and complete understanding of all related field references from other datasets. Incomplete changes will produce inconsistencies and unexpected results.

New fields, however, may be easily added to each existing template dataset to create a customized database for your AMS REALTIME Resources system.

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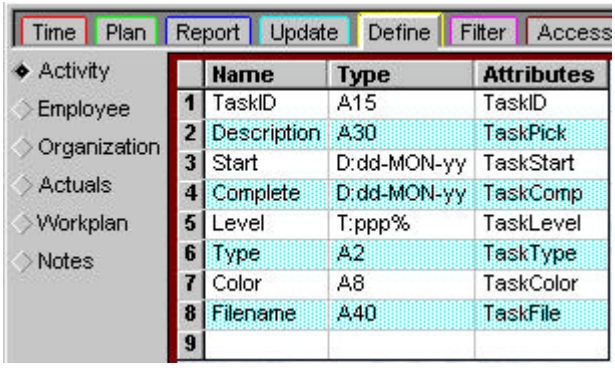

Defining an Activity Dataset

Renaming, Creating and Deleting Datasets

The three buttons to the right of the dataset allow you to rename, create, or delete the currently selected dataset. These functions allow you to create new datasets, delete old user-defined datasets, or rename an existing dataset.

Datasets must be empty before they can be deleted. This is a safety precaution. If a deleted user-defined dataset will be replace by a new dataset, you should exit and restart AMS REALTIME Resources before the new dataset is created to ensure that the old dataset is fully cleared.

Note: If a field name or dataset is redefined or renamed, it is important to ensure that all other virtual fields and reference fields that will be affected by the change are also updated.

Filter

Selecting **Filter** will produce a table of matching and sort criteria for the selected dataset. A Filter Name, which is entered in the leftmost column, is used to select a filter from the popup when it is applied to the dataset.

Filters allow you to create simple sorts and matching criteria, or create combinations of filters that sort data on multiple fields, and apply complex and/or logic to the data. Since each filter has a name, each filter can be reapplied instantly by selecting the filter name from a popup.

Match criteria uses the basic compare symbols, including greater than, less than, equal (both case sensitive and insensitive) and not equal. Wildcard symbols may be used. Matching specifications on the same line represent and logic, and matching specifications on subsequent lines represent or logic.

Access

The **Access** table defines each access level, which determines which AMS REALTIME Resources functions are accessible to each user. It is recommended that only the System Administrator have update

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access to the Access table, and that most users not be allowed to view this table.

The Access table his comprised of a basic three-letter code for each dataset and function. For dataset access codes, the first letter determines the level of change allowed to dataset filters. The second letter determines what the user can change in the contents of each dataset. The third letter determines the level of change allowed to dataset definitions.

Filter names can also be applied to an access code by adding *:filtername* to the three-letter code. View names can be applied to the access code by adding *:optional filter | viewname* to the code (e.g., **RR-: EmpFilter | PartialView**) The combination allows limited access to certain fields of a dataset, such as allowing the user to look at only his own personal employee information, but only those fields specified by a locked view.

Other Hotspots

Tool Tips

If the cursor is positioned on top of a button, a popup message will appear, providing a brief description of the button's function.

The Message Area

At the bottom line of the AMS REALTIME Resources screen, an area exists where helpful messages are displayed. Whenever the mouse is positioned over a hotspot area that is used to access a AMS REALTIME Resources function, a message will display that tells you what will happen when you *click* (or *double-click*) at that spot.

For example, position the mouse over the Clock, which is located at the bottom of the Calendar. The message area says, "*Click* to Select Clock Display Format." Now *click* on the Clock display. A popup appears with four time formats. *Clicking* on any one of those time formats will reset the Clock display.

Resizing the Window Layouts

Dragging on the line that separates each window area will allow you to resize the boundary and alter the screen layout. Changing the screen to a full table display by dragging the boundary down into the calendar area will allow more table information to be viewed simultaneously. This can be easier than scrolling to view many related pieces of information. When you need to see the graphic employee information or the Calendar again, just *drag* on the boundary line and pull out the area.

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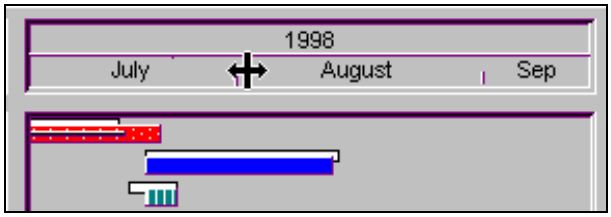
Resizing the Calendar Timeline Window

The calendar timeline (shown across the top of the Gantt chart area) can be rescaled to show a section of the employee's task list in more detail (or less detail). To look at the task list in less detail and extend the range of the calendar timeline, *click* on the right edge of the calendar timeline and *drag* inward, or *click* on the left edge of the calendar timeline and *drag* inward.

The Vertical Bar Cursor with Inward Pointing Arrows
Pulls More Time into the Calendar Timeline

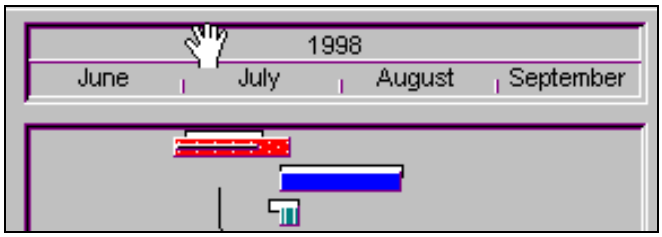
To look at a section of the task list in more detail, click on the starting timeline point and drag to the left edge of the timeline. Then click on the complete point and drag to the right edge of the timeline. The calendar timeline labeling will automatically change as space permits.



The Vertical Bar Cursor with Outward Pointing Arrows
Pushes Time off the Calendar Timeline to See More Detail

Panning the Calendar Timeline Window

The calendar timeline (shown across the top of the Gantt chart area) can be rescaled to show a section of the employee's task list in more detail (or less detail).



The Hand Cursor Shifts the Calendar Timeline

Calendar Control

AMS REALTIME Resources version 1.3 now supports multiple calendars to determine working and non-working days. Up to 16 different working calendars can be defined. Calendars control many aspects of planning, time and date calculations, and changes to a calendar can have a wide-spread impact. Therefore, calendars are not directly passed between AMS REALTIME Resources and

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Projects, but must be dumped and loaded by a System Administrator (or someone who has Full Calendar Access rights) for synchronization.

The current calendar date (today) is slightly pushed down in the display. AMS REALTIME Resources gets the current date from the computer's system date. A small box will always appear around today's date, and a diagonal line crosses out all days in the past.

The currently selected date is used in Time mode to determine which timecard record should be displayed. To change to another Time week, *click* on any calendar date within the week. If changes have been made to the timecard data, AMS REALTIME Resources will prompt you to save the record before continuing.

Clicking on the innermost arrows on either side of the calendar title allows you to move backward and forward through the adjacent months. *Clicking* on the outermost arrows on either side of the calendar title allows you to move backward and forward by adjacent years. *Clicking* on the current month name at the top of the calendar display provides a popup of all months in the current year. Selecting a month name from the popup will change the calendar display directly to the specified month.

The two buttons in the lower right corner of the calendar area provide calendar display options. The **WDays On/Off** button toggles a Julian working day display on each day. The **Markout On/Off** button toggles the cross-out lines for days in the past.

Editing Calendars

Calendars can be customized to allow for specific working and non-working days and a working shift. If AMS REALTIME Resources data will be exchanged with AMS REALTIME Projects, ensure that the working calendars are identical for consistent results.

Note: *AMS REALTIME Resources verifies that the user has Full Access to all aspects of a Filter table before allowing any Calendar modification to be saved to a server database. Any modifications to the working calendar can impact activities, employees and planned work.*

To edit a calendar, *click* on the Calendar tab. Especially if you are working on a small display monitor, the calendar definition areas can be enlarged to show more information. To do this, click and drag the line separator between the definition area and calendar area to the bottom of the screen.

As you can see, Calendar Mode shows a familiar-looking desk calendar covering a six-week period, with non-working days highlighted by displaying their dates in red. In the default Calendar, all Saturdays and Sundays are non-working days, and the other days are working days.

Dates which have already been worked, that is, those dates which are before the **Now** date, are shown crossed through.

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To the right of the screen are a series of tabs which can be used to define specific information about each calendar. Above the calendar and the tabs are some calendar-specific icon tools which are covered in detail below.

When you first enter Calendar mode, the **Info** tab is displayed, which shows the basic information for the current calendar. In the example above, the **Calendar Name** shows that we are working on the **Default** Calendar. The **Select Calendar** icon (the rightmost button at the top of the screen) also shows the name of the current calendar. Click the icon to see a list of other calendars, and select the name of the calendar you want.

The **Base Date** is the point at which the calendar starts. You will notice that the working days in the calendar are numbered sequentially, and the number displayed at the bottom right of the date box. (The figure at the top left is the actual date). This generic day numbering starts from the day after the **Base Date**, since the Base Date is zero.

Any changes you make can be saved by clicking the Save Calendar Changes button. The Discard Calendar Changes button can be used to ensure that none of the changes you have just made are saved.

Working Time - Shifts

As well as being able to define which days are working or non-working, you can also specify which hours are to be worked within the working day. These hours can be set up to mirror the shifts worked on the project.

In the **Info Tab,** the basic shift information is entered and displayed in the **Shift Start** and **Shift End** boxes. These times are used to determine how many working hours there are in a working day, which is entered in the **Day Length** box, in this example, 8 hours. Depending on the number of working days in the week, AMS REALTIME Projects will calculate the **Week Length**, in this case 40 working hours (this can use the format hh:mm). In a similar fashion, the **Month Length** shows the number of working hours in a month.

Moving Around in the Calendar

To move around in the calendar, to display a different month or year, use the left and right arrows above the calendar. On the left-hand side, closest to the month label, click on the right arrow to advance to the next month, and click on the left arrow to move to the previous month. On the right-hand side, closest to the year label, click on the right arrow to advance to the next year, and click on the left arrow to move to the previous year.

Selecting Dates

Dates can be selected in a variety of ways:

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- Select an individual day by clicking on its date box. The date selected is highlighted by showing the date box depressed as if a switch has been pushed in.
- Select a range of dates by dragging across the date boxes. All the dates selected are highlighted by showing the date boxes depressed.
- Select a day of the week, for example all Saturdays, or all Wednesdays, by clicking on the day name at the top of the calendar. This highlights the day name, but does not show the specific dates selected.

Changing Working Days

To change specific holidays from working days to non-working days, or vice versa, choose the Holidays tab. Select the appropriate date on the calendar and click the **Holidays** tab on the right of the screen.

The screen changes to show the Holidays dialog. The date or date range you have selected is shown in the From and To boxes. Click **Add Holiday** to make these days non-working holidays. Alternatively, click **Delete Holiday** to change the selected days from holidays to working days.

Individual date changes only apply to the current year, so remember to set annual holidays for each year in the project span… BEFORE you schedule in that year!.

Work Cycles

In addition to changing the days when work will be done, you can change the time during the day when work will be done. This is important for determining the activity span and for many advanced calculations. To change the shift, click on the **Cycle** tab. You are presented with a dialog box which allows you to select a day of the week and set up the **From** and **To** times for the shift.

You can select the day by clicking on the Shift For box and selecting a day from the drop-down list. Alternatively, select a day on the calendar.

Enter the times for the shift. To define the entire day as a shift, enter **00:00** for the **From** time and **24:00** for the **To** time. Then click **Add Time** to set these times as the shift for that day.

You can also create a split shift cycle by defining successive periods. For example, a lunch break can be specified on the calendar by defining a shift from 07:30 to 11:30 for Monday, and then adding a second shift period from 12:30 to 4:30 for Monday. Just specify the first period, click on Add Time, and repeat the process for the second period.

To change the shifts for a day, select the day in the list at the bottom of the dialog, and click **Delete Time**. Then add the new times as discussed above.

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Any cycle of shifts that you define is specific to a defined time period, which is called a range. For example, the range for this cycle could be defined as being valid from June 1st to September. 30th. The date range is defined using the Range tab, and the default range is Always.

The Range for this Cycle is selected by using the Range button to select from a drop-down list. Combining Ranges and Cycles in this way permits you to set up very sophisticated and complex patterns of work.

Defining Overdays

AMS REALTIME Projects also allows you to define working day exceptions, which are specific working days which would normally be non-working. These extra hours or days are entered as overdays.

To define overdays, which are working days that are normally non-working, but will be worked as an exception, click the **Overdays** tab. Either select a date on the calendar and enter the dates in the **From** and **To** boxes.

When you click **Add Overdays**, the exception working days will be displayed at the bottom of the dialog.

To remove or change existing overday definitions, select the appropriate date at the bottom of the dialog and click **Delete Overdays**.

Specifying the Range of Dates Covered by a Cycle

Your project may use standard shift patterns throughout its whole duration. On the other hand, it could be that shift patterns, overdays and holidays will change from time to time throughout the project. For example, you could work one set of shift patterns during the summer, and move to a different working pattern for the winter months.

AMS REALTIME Projects allows you to specify a range of dates for which the other information is applied.

Click the **Ranges** tab to access the **Range** dialog box.

Use the **Range** button to select an existing range or click Add Range and name the new range. The **Always** Range is the default range, which means that any cycle, holiday or overday information is applied to all dates.

The date on which the Range is to start operating is entered in the **Start** box.

The Synch date is the first date in the beginning of a cycle for the new calendar range. For example, the summer calendar might start on June 21, but if that is a Wednesday, and the cycle starts on a Monday, we can set a Synch date for June 26, which is the next Monday.

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Synch dates become clearer when they are applied to calendars with odd cycles (instead of a weekly shift pattern). If a 10 day shift cycle is defined, the system needs a way to determine which day is which, since there will be more than one Monday in the pattern.

For example, let's say we have defined a range that uses a **10** day **Cycle Length**, enter a **Start** date of **01JUN97** and a **Synch** date of **11JUN97**. When we look at the **Cycle** for this range, we will **see Day 1 of 10**, **Day 2 of 10**, **Day 3 of 10** and so on in the **Shift For** popup, where we had previously seen the days of the week.

Specify the length of the cycle in the Cycle Length box. The default is 7, which means that you can the shift times using the calendar week specifically for this Range.

Creating a New Calendar

As well as making changes to existing Calendars, you can create new calendars. Click on the Calendar tab to enter Calendar mode, where the display will show the current calendar. Click the New Calendar icon, at the left-hand side of the screen.

The **Info** tab change to display the **Calendar Name** as **New Calendar**. Edit this field to enter the name you want to use.

From now on, the Select Calendar icon will include this new calendar as part of the selection list. Any changes you make on any other tab apply to the new calendar, so do take care that you have selected the correct calendar before making any changes.

To leave the Calendar mode, click on OK and change to another tab. If you are running in client/server mode, the calendar changes will save with the next automatic database save, but to ensure that the change is immediately stored, you can also force a **File Save** from the AMS REALTIME Resources Server program.

General Summary

Schedule and resource data can be introduced into the database in several different ways: by manual data entry, by importing text files which contain the data for each dataset, from Microsoft Projects files that have been saved to the Resources database using ODBC, or from existing schedules using the direct AMS REALTIME Projects interface. Once activity and employee information has been entered, employee workload planning can be accomplished for each activity.

Employees can then post the hours they have worked on each individual assigned task. If an employee works on an activity which has not been assigned, they can add a new activity from the Time screen. If an employee adds a new activity, that employee is automatically assigned to the task. Once timecard hours have been posted, the Report function will produce a wide variety of reports, including saved reports that can be accessed by other programs using ODBC. Timecard data can also be sorted and filtered.

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In a local client environment, information is stored in a local database. In a client server environment, the dataset records are stored in the server database, which is remotely accessed. Processing is performed on both the client and server.

The **AMS REALTIME Resources Server** program handles all client transactions, and has its own configuration file. The configuration file contains the name of the server and the database, network timing adjustment parameters, protocol parameters, and other preference and file settings.

As with the client configuration file, this information is read by AMS REALTIME Resources only upon initial program startup. When the data has been modified and the user has not saved the data file, the program will prompt the user to save before quitting the program. The user can quit without saving, if desired. If a user selects another reporting week, the program will prompt the user to save.

Actual time worked can be reported in a variety of ways. Reports can be created and stored for instant recall. Views and filters combine to provide additional flexibility in presenting timekeeping information. For instant and accurate status updates to AMS REALTIME Projects, actual hours, progress, and plan changes can be synchronized or exported to other external systems.

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Defining Datasets

The Basic AMS REALTIME Resources Datasets

The three basic text datasets are information sets containing Activity, Employee and Organization information. The field names, data typesThe Actuals and Workplan datasets are the standard numeric type (i.e., containing time-phased data) datasets. These contain the source data that appears in Plan mode and the Timecard screen. As with the standard text datasets, the basic fields, data types and attributes should not be redefined. There is some capacity to add additional fields to these numeric datasets, but only within the existing slot reference structure.

New datasets can also be created to hold information to support your project and resource management systems, such as customer information, billing and expense data, or document control information. AMS REALTIME Resources can support up to 41 datasets in total (the 5 standard datasets plus up to 36 user-defined datasets).

There is no implied order to dataset fields. Fields may be inserted or deleted, but if a field is deleted, all corresponding data is lost. Each field has a list of possible data types. Reference field types allow selection of fields from other datasets. Virtual field types automatically create the data from defined component fields or subfields.

Creating Dataset Field Definitions

The first field in the dataset should be a unique record identifier. To define the fields in a dataset, select the dataset name and choose Define (note that only users with Full access to the dataset table definition will be able make database definitions). Enter the field name, and then tab over to choose a data type.

You can *click* in the Type field to get a menu popup that will prompt you for the data type, size and format, or **Ctrl**-*click* to get the cursor and edit or enter the type manually. The types are shown in the definition using the following format:

TypeCode [Size] [: FormatControl].

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Data Types and Format Controls

The following table describes the data types and formats which are available:

Type	Size	FormatCtrl	Sample	Description
Number	20		N	Up to 20 numeric characters
Alpha	1-255		A35	Up to 35 chars of text
		_ (underscore)	A25:_	Up to 25 chars of text with all spaces removed
		U	A12:U	Up to 12 chars of upper case text
			A:_U	Default of up to 20 chars of upper case text with spaces removed
Date		dd	D:dd	Day
		ddMON	D:ddMON	Day MonthName3
		ddMONyy	D:ddMONyy	Day MonthName3 Year
		ddDAY	D:ddDAY	Day DayofWeek
		dd-MON-yy	D:dd-MON-yy	Day-MonthName-Year2
		dd-MON-yyyy	D:dd-MON-yyyy	Day-MonthName-Year4
		DAY	D:DAY	DayofWeek
		mm/dd	D:mm/dd	Month/Day
		mm/dd/yy	D:mm/dd/yy	Month/Day/Year2
		yymmdd	D:yymmdd	Year2 Month Day
		yyyymmdd	D:yyyymmdd	Year4 Month Day
Time		hh:mm	T:hh:mm	Hours:Minutes
		hh.t	T:hh.t	Hours.Tenths
		hh:th	T:hh:th	Hours.TenthsHundreds
		hh	T:hh	Hours
		ppp%	T:ppp%	Percentage of Day
Reference	20 is default max		R:Project.Name	Provide a popup of the field contents of the Name field from the Project dataset.
			R25:Customer.ID	Provide a popup of the field contents (25 characters long) of the ID field of Customer dataset
Virtual			V:Last + ", " + First	Populate this field (up to 20 chars) with Last, a comma, and First
			V40:Project.Name + ID	Populate this field (up to 40 chars) with the Project Name field plus ID
			V30:Last[1:5] + ID	Populate this field (up to 30 chars) with the first 5 chars of Last plus ID

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Type	Size	FormatCtrl	Sample	Description
Lookup			L:Org.Code	Lookup table field to establish data contents by a date period
Calculate			C:BCWS-BCWP	Calculate fields using standard or special operators. Special operators are % (percentage) and # (percent of total), standard operators + - * /
Pick			P:Task MS NP	Provide a popup of Task, MS and NP for data selection.
Group Operation			C:Min(Workplan, Date)	Calculate the Min, Max, Sum, or Count (record count) of a numeric dataset field (Actuals or Workplan).
Drilldown			W40:Programs. Name=WBS_IT	An activity reference field to a WBS source table.
Child			K:WBS_IT. SubProject	A field that identifies a datasource table as having a WBS level beneath (a child table).
Parent			O:WBS_IT. Program	A field that identifies a datasource table as having a WBS level above (a parent table). This can also be used to create a WBS subset branch.
Calendar			Julian Calendar	A field that stores a working calendar.
Access			?	Future use - popup of defined access levels.
Progress			S	Future use - enforce percentage boundaries of 0 - 100%.
Filter			F:Activity	Future use - popup of defined filter names.

Note: Date and time formats are for display purposes. Dates can be entered using any valid date format containing the month, year, and day. Virtual and Reference fields default to 20 characters unless specified otherwise. If a Virtual or Reference type string is longer than the specified number, the remaining string is ignored.

Defining the Activity Dataset

The basic activity fields which are required by AMS REALTIME Resources are already defined in the Activity dataset. While these names can be modified, *extreme* care must be taken to change all other related field references across all datasets if changes are made. The contents of the Attribute field are used to differentiate special purpose fields.

To add new fields to the Activity dataset, *click* in the first empty line under the **Name** column. Type in the new field name.

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Data Types

Click on the same line under the **Type** column. A popup will appear containing all of the data types available. *Click* on the appropriate data type.

Alpha

If the **Alpha** type is selected, a prompt will appear so that the maximum field length can be entered.

Reference

If the **Reference** type is selected, a popup will appear that allows you to select the dataset you wish to reference. *Click* on a dataset name. Once a dataset has been selected, a popup will appear containing the fields in that dataset. *Click* on the field name you wish to reference. When a user selects a Reference type field, a popup will appear, allowing data selection from the contents of the referenced field in the other dataset.

Reference Defaults

To set a default for a reference field, control click in the type column. This will open the field for editing without producing the data type popup menu. Add an exclamation point after the reference field definition and then enter a reference link to a default value.

R:Organization.Code!Employee.Org Code

Virtual

If the **Virtual** type is selected, a popup will appear that contains all the fields in the current dataset. Continue *clicking* on each field until you have selected all you want. The contents of the new field will be automatically created from all of the fields you have selected. To override the popup and add text to the virtual field definition, hold down the **Ctrl** key and *click* in the field definition. A cursor will appear, allowing you to add text or edit the field.

Virtual Reference

A virtual reference field is a field that is automatically populated by a reference link to another dataset. For example, each employee has an Org Code. If the Org Code is defined as a reference field to a Code field in the Organization dataset, the Employee's Org Code will establish a link to a particular Organization record. Other fields in that record can be linked as a Virtual Reference field, such as a Manager.

To define a Virtual reference field, enter a new field name. Chose Virtual as the data type, and then select the field that contains the reference link to another dataset. A popup will then appear that

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contains all the fields from the linked dataset. Choose a field from the list to populate the virtual reference field.

Pick

If the **Pick** type is selected, a dialog will be provided so that you can enter all the possible choices for the field. The pick list items can be separated by a comma or a space. Items with embedded spaces must be enclosed in quotes. This type provides a method for data validation. **Ctrl-***click* will override the popup and allow direct editing, but the entry still must match one of the pick list items.

Lookup

If the **Lookup** type is selected, you must specify the name of a lookup table. As the lookup table contents change by date range, the resulting data will change as well.

Calculate

If the **Calculate** type is selected, a popup will appear that allows you to select from the defined fields. Once a field has been selected, a second popup will allow selection of an operator. Once an operator has been selected, the field list will reappear to allow a second field selection. from . The last popup will contain the fields from the selected dataset.

Overriding Data Type Popups

To override the function popup and build a more complex calculated formula, hold the **Ctrl** key and *click* in the type column to open the field definition for editing. The formula must be preceded with **C:** to indicate a calculated field type. Make sure that any field you use in a calculated formula has been previously defined in the dataset.

The following operators can be selected:

	Sample	Description
+	x + y	add x to y
-	x - y	subtract y from x
*	x * y	multiply x by y
/	x / y	divide x by y
%	x % y	find percent x is of y
#	x # y	find percent that x is of (x + y)

To modify the format specifier, hold down the **Ctrl** key and *click* on the current type. A cursor will appear, allowing you to edit the

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format specifier. You can add substring specifiers to virtual fields by adding the start column and stop column after the field name. The columns must be enclosed in square brackets and separated by a colon (e.g., **name[3:6]**). You can also edit in text constants by enclosing the text string in quotes and using the plus sign to append the string with the field components (e.g., **last + ", " + first**).

Group Operations

If the **Group Operation** type is selected, a function popup will appear. Select the Min, Max, Sum or Count function from the popup. Then select a numeric dataset from the popup list. The last popup will contain the fields from the selected dataset.

Drilldown, Child and Parent Types

The **Drilldown**, **Child** and **Parent** types are used for defining WBS tables, where approved projects, phases, and other breakdown levels can be stored. Users can then use a pre-defined drilldown mechanism to select unplanned tasks by choosing each WBS level in series, down to the work package. This process is covered in detail in the section on Work Breakdown Structures.

Calendar

The **Calendar** data type should be used for a calendar name that contains a Julian working calendar name.

Future Data Types

Access, **Progress** and **Filter** types are not yet incorporated in Version 1.3, but will be implemented in the future. The Access and Filter data types will be used to automatically produce a popup of the existing Access levels and Filter names, respectively. The Progress data type will be used to enforce percentage boundaries of 0% through 100%.

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Attributes

The Attribute keywords for the Activity dataset are:

TaskID	This field contains the unique activity identifier.
TaskPick	The contents of this field will be used for the task popup in Plan mode and Time entry mode.
TaskStart	This field must contain a valid task start date, and is used to determine the overall work span of the task.
TaskComp	This field must contain a valid task complete date, and is used to determine the overall work span of the task.
TaskLevel	This field must contain a percentage level-of-effort, and is used to determine the overall work span of the task.
TaskType	This is used to specify project and non-project tasks; non-project tasks have a type that begins with the letter **N.**
TaskColor	The color and pattern numbers in this field are used to determine the color and pattern of the activity bar on task lists.
TaskFile	This field can hold a filename which receives the actual hours used on the task when a Dump is executed.
TaskResFilter	This skill filter specifies the skill required by the task, so that in Plan mode, only those resources with a matching skill are displayed.
TaskPC	The percent complete field used by the AMS REALTIME Projects interface to correspond to the schedule Progress field.
ActID	The field used by the AMS REALTIME Projects interface to link to the schedule Activity ID (if not found, the field with TaskID is used).
TaskDrilldown	This is the starting field that will be used for a defined drilldown order for unplanned work selection.
TaskCal	The field used to hold the activity's working calendar.

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A Sample Activity Dataset Definition

The following is a sample of an Activity Dataset definition. Field names are followed by field types and formats. Key fields have an Attribute key specified.

Defining the Employee Dataset

The basic employee fields which are required by AMS REALTIME Resources are predefined in the Employee dataset. While these names can be modified, *extreme* care must be taken to change all other related field references across the datasets if changes are made at all. The contents of the Attributes field (by specific keyword) determines how AMS REALTIME Resources differentiates between special purpose fields and fields which contain other information.

The Attribute keywords for the Employee dataset are:

ResID	The contents of this field will be displayed in a popup when selecting the Organization in Plan mode.
ResOrg	The contents of this field will specify the organization to which each employee belongs.
ResPick	The contents of this field will populate the resource popup (a list of employees).
ResLogin	This field contains the Login ID for each employee.
ResLabel	This field is used to label each employee's task list (the schedule bars).
ResProxy	This field is used to identify an alternate employee login that can access a AMS REALTIME Resources account without knowing the password.
ResPassword	This identifies the Login password field.
ResAccess	This identifies the Access Level field.
ResType	This field is used to identify specific vs. generic resources.
ResDrilldown	This identifies a field which holds the name of a Resource drilldown filter.
ResCal	This identifies a field that contains the name of the Resource Calendar.

To add new fields to the Employee dataset, *click* in the first empty line under the **Name** column. Type the new field name.

Click on the same line under the **Type** column. A popup will appear containing all the data types. *Click* on the appropriate data type. If the **Alpha** type is selected, a prompt will appear so that the maximum field length can be entered. If **Reference, Virtual,**

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Calculate, Pick or other types are selected, follow the same procedures described in the section above on ***Defining the Activity Dataset***.

Defining the Organization Dataset

The basic organization fields which are required by AMS REALTIME Resources are predefined in the Organization dataset. While these names can be modified, *extreme* care must be taken to change all other related field references across the datasets if changes are made at all. The contents of the Attributes field (by specific keyword) is how AMS REALTIME Resources differentiates between fields which are used for a special purpose and fields which contain information which is a user reference only.

The Attribute keywords for the Organization dataset are:

DeptPick	The contents of this field will be displayed in a popup when selecting the Organization in Plan mode.
DeptOrg	The contents of this field will be used for each employee's OrgCode, which can be used to create an organizational hierarchy.

To add new fields to the Organization dataset, *click* in the first empty line under the **Name** column. Type the new field name.

Click on the same line under the **Type** column. A popup will appear containing all the data types. *Click* on the appropriate data type. If the **Alpha** type is selected, a prompt will appear so that the maximum field length can be entered. If **Reference, Virtual, Calculate, Pick** or other types are selected, follow the same procedures described in the section above on ***Defining the Activity Dataset***.

Renaming, Creating and Deleting Datasets

You can create new datasets, delete old user-defined datasets, or rename an existing dataset using the Rename, Create, and Delete buttons that are located underneath the dataset names along the left side of the screen.

Datasets must be empty before they can be deleted. This is a safety precaution. If a deleted user-defined dataset will be replaced by a new dataset, exit and restart AMS REALTIME Resources before creating the new dataset.

There are two types of datasets: **Text** and **Numeric**. Text datasets are standard, and should be selected for most types of data storage and retrieval. The Activity, Employee and Organization datasets are Text. Numeric datasets are time-phased and have one or more reference links back to a key field in other datasets which make the

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record unique. Numeric datasets are limited to reference, date, pick, calculated and numeric data types. The Actuals and Workplan datasets are Numeric. Other examples of a Numeric dataset would be a Lookup table for time-phased rates or organizations, or a dataset that stores statistical information.

Note: If a dataset or field name is redefined or renamed, it is important to ensure that all other virtual fields and reference fields that access the new field are also updated.

Timecard Notes and Annotations

You can create a dataset that can be used to store information about a particular timecard entry through a link. First, create a new text database. The name will appear in a button in Time mode, so it may be desirable to use a short descriptive field name, such as **Notes**. Then create a field in the new database to hold text information. More than one field can be created to hold information that is annotated to the actual time entry.

The Actuals dataset has a **Reserved** field for the link information. Change the Type of the Reserved field to **Extension**. Then choose the new database you have just created from the popup. The Reserved field should now be defined as **X:Notes[6]** (six being the slot used).

In the Time mode, a button will appear next to the New Activity button that contains Notes (or the name of the text annotations database). When a time cell for a specific date is selected, clicking on the Notes button will provide a dialog that allows an employee to add in information annotations to the selected date.

This data can also be viewed in the Actuals database, where all linked fields will be displayed with the time entry record. To see only those fields which have a Note annotation, create a filter in the Actuals Filter table where the Reserved field[6] is not equal to a blank (e.g., enter <> under the field defined as the Extension field).

Decimal Calculations and Reference Fields

AMS REALTIME Resources has the capability to hold and calculate costs based on Rates * Hours. Cost values are calculated to an accuracy, or float precision, of two decimal places. This section outlines how to set up a simple cost calculation in AMS REALTIME Resources based on a rate multiplied by the actual hours worked.

The first step is to define a new dataset. This can be used to hold rates for different types of work or different skill levels. For this example, we are going to create a new table called **Rate**. We will store a number of different rates which vary based on employee type. For example, Engineers might be charged at a rate of say $20.50 per hour, while Technicians are charged at $17.50 per hour.

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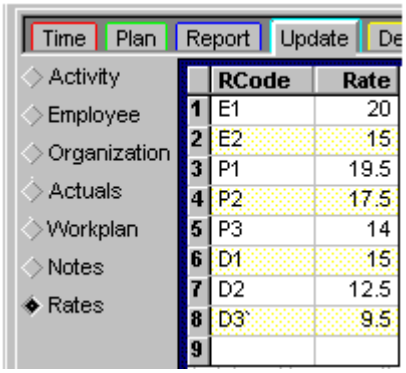
In the following example, we are going to explore how to set up a very simple activity cost summary based on hours worked, by whom and at what rate. The total cost of the work can be shown against individual tasks in the Activity table.



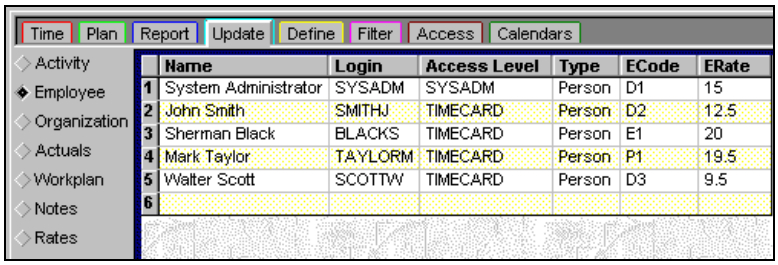
	RCode	Rate
1	E1	20
2	E2	15
3	P1	19.5
4	P2	17.5
5	P3	14
6	D1	15
7	D2	12.5
8	D3`	9.5
9		

A Sample Flat Rate Table

Adding Rate References to the Employee Table

Since these rates are based on an employee work category and level, we will now add fields to the Employee dataset that reference which rate will be used for each employee. By creating a reference field that provides a popup of all of the Employee Codes in our Rate table, we can select an category for each employee. We can also define a virtual reference field that populates with the corresponding rate based on the employee code selected. This rate field can be used not only for calculations in the employee table, but can also be used in the actuals table when an employee record is referenced.

In the sample Employee dataset, we have added two fields: **ECode** and **ERate**. ECode is defined as a **Reference** field to the descriptive field in the Rates dataset. ERate is defined as a **Virtual Reference** field to the actual numeric rate. This means that as soon as an ECode is selected, the ERate is automatically populated with the corresponding value.



	Name	Login	Access Level	Type	ECode	ERate
1	System Administrator	SYSADM	SYSADM	Person	D1	15
2	John Smith	SMITHJ	TIMECARD	Person	D2	12.5
3	Sherman Black	BLACKS	TIMECARD	Person	E1	20
4	Mark Taylor	TAYLORM	TIMECARD	Person	P1	19.5
5	Walter Scott	SCOTTW	TIMECARD	Person	D3	9.5
6						

Rate Data in the Employee Table

Adding Rate References to the Workplan Table

You may have noticed that each field definition in the Workplan datasets is followed by a number in brackets. All of the data in these

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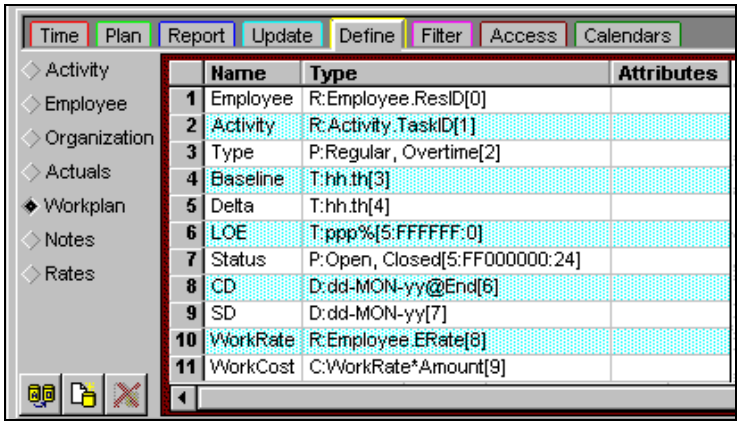
numeric type datasets are stored using different bits, or slots, of the same data variable for more compact information storage. The slot identifiers tell the program which part of the field to use.

The information stored for the Employee and Activity fields are pointers to the record in the Employee and Activity table. For example, the data stored in the [0] slot will contain a pointer back to the employee record used for the current Workplan record. The [1] slot contains a pointer back to the activity record.

We can take advantage of this pointer link back to the base record to add new fields. By adding a reference field back to another field in the Employee dataset, such as ERate (the employee's hourly rate), and then also appending the element number of the pointer reference, we can automatically bring related data into the Workplan dataset. For data that's not related in the Actuals dataset, we will have to use slot 6, which is reserved for other uses. The Workplan dataset contains slots 0 – 15. Slots 8 and higher are available for customer use. In the Actuals dataset only slot 6 is available for customer use.



	Name	Type	Attributes
1	Employee	R:Employee.ResID[0]	
2	Activity	R:Activity.TaskID[1]	
3	Type	P:Regular, Overtime[2]	
4	Baseline	T:hh.th[3]	
5	Delta	T:hh.th[4]	
6	LOE	T:ppp%[5:FFFFFF:0]	
7	Status	P:Open, Closed[5:FF000000:24]	
8	CD	D:dd-MON-yy@End[6]	
9	SD	D:dd-MON-yy[7]	
10	WorkRate	R:Employee.ERate[8]	
11	WorkCost	C:WorkRate*Amount[9]	

Actuals Rate Field Definitions

The two fields we have added in this sample are **WorkRate** and **WorkCost**. WorkRate is defined as a reference field to the rate stored in the ERate field of the Employee table (by virtue of the selected ECode). To add the Employee record reference into the definition, hold down the **Ctrl** key and click in the Type field. This will open the field for editing without producing the Data Type popup. Append **[8]** to the end of the reference field definition.

Now that the rate for this employee exists in the Workplan table, it can be used to calculate the cost of this particular entry of actual hours. The Cost field is the calculation field that will perform the math by multiplying the hourly amount by the rate for each plan record that is recorded in the time sheet. Add the field **WorkCost**.to the Workplan table. Make it a calculated field based on the **WorkRate** multiplied by the **Amount.** Then hold down the **Ctrl** key and click in the Type field. This will open the field for editing without producing the Data Type popup. Append **[9]** to the end of the calculated field definition.

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Make careful note of the slot numbers in square brackets which suffix the type entries. These must be entered exactly as shown or the function will not work. Each field in the Actuals and Workplan datasets must have an appended slot number that is shared in order to function correctly. The numbers in square brackets indicate which slot is allocated for the data in AMS REALTIME Resources.

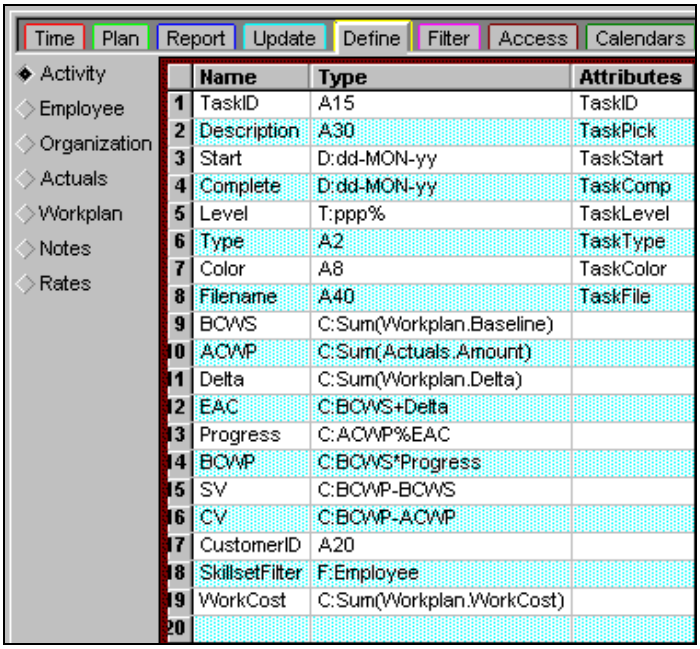
Calculating Total Costs in the Activity Table

It may also be useful to add a field to the Activity dataset which calculates the total hours or total cost of work for the activity. To do this, we will define a field that sums up all of the WorkCost information from the Actuals dataset for each activity.

To create and define this field, enter Define mode for the Activity dataset. Add a new field such as the WorkCost field in the sample below.

In the Type column, select **Group Operations** from the popup. Choose the **Sum** function.

Pick the **Actuals** dataset and choose the **WorkCost** field from the popup of Actuals fields. The WorkCost field in the Activity dataset will now contain a summary of costs for each activity that are derived from the actual hours multiplied by the employee's rate..



	Name	Type	Attributes
1	TaskID	A15	TaskID
2	Description	A30	TaskPick
3	Start	D:dd-MON-yy	TaskStart
4	Complete	D:dd-MON-yy	TaskComp
5	Level	T:ppp%	TaskLevel
6	Type	A2	TaskType
7	Color	A8	TaskColor
8	Filename	A40	TaskFile
9	BCWS	C:Sum(Workplan.Baseline)	
10	ACWP	C:Sum(Actuals.Amount)	
11	Delta	C:Sum(Workplan.Delta)	
12	EAC	C:BCWS+Delta	
13	Progress	C:ACWP%EAC	
14	BCWP	C:BCWS*Progress	
15	SV	C:BCWP-BCWS	
16	CV	C:BCWP-ACWP	
17	CustomerID	A20	
18	SkillsetFilter	F:Employee	
19	WorkCost	C:Sum(Workplan.WorkCost)	
20			

Calculating Activity Costs

Lookup Fields

Lookup fields are used for information that changes over time. For example, an employee's organization may change if he transfers from one department to another. If the employee's organization

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code is a text or reference field and the organization is simply changed, the history of the previous organization's actuals will be lost.

However, if a lookup table is created to specify an employee's organization based on an "as of" date, actuals that were posted under the old organization will still belong to the previous organization, and the actuals after the "as of" date will be assigned to the new organization.

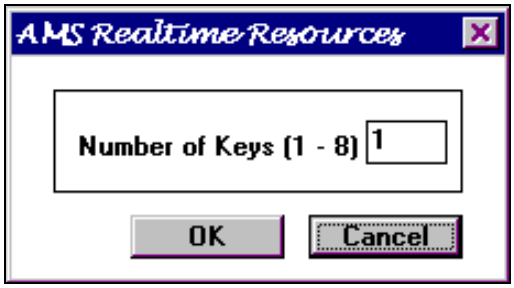
Lookup tables can be used for rates that change over time, organization codes, or any other information that varies with time.

Creating a Lookup Dataset

In the sample provided below, we will create an Organization lookup table. The first step is to create a numeric dataset. It will have one Key Field which will reference the a unique employee identifier, ResID.

Use the Create New Dataset button to add a new dataset. We will call it **OrgLookup**. Choose the **Numeric** dataset type.

At the **Number of Keys** prompt, enter 1. The Organization lookup only needs one reference field for the employee's ResID to have a unique field reference.



Specifying the Number of Key Fields

At the **Number of Slots** prompt, enter 8. This will provide the room to define up to 8 slots, which are references to other records or independent fields, in the Lookup database. While we will only start by defining 3 fields, this will provide room for the database definition to be expanded.

Note that if the fields are unique references, the slot numbers do not have to be specifically entered. The first field uses slot 0, the next field uses slot 1, and so on. However, if another field is defined where the slot reference will be shared, that slot must be specifically entered. Hold down the **Ctrl** key and *click* in the **Type** field to override the popup and append the slot number to the field (e.g., the fields R:Employee.ResID[0] and R:Employee.Rate[0] share a reference to an employee record).

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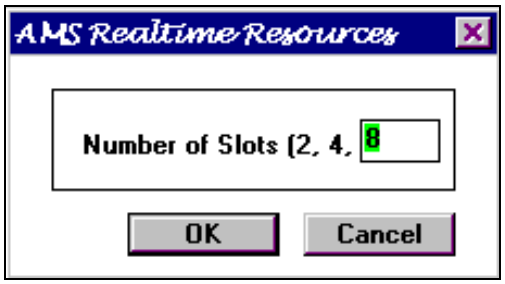
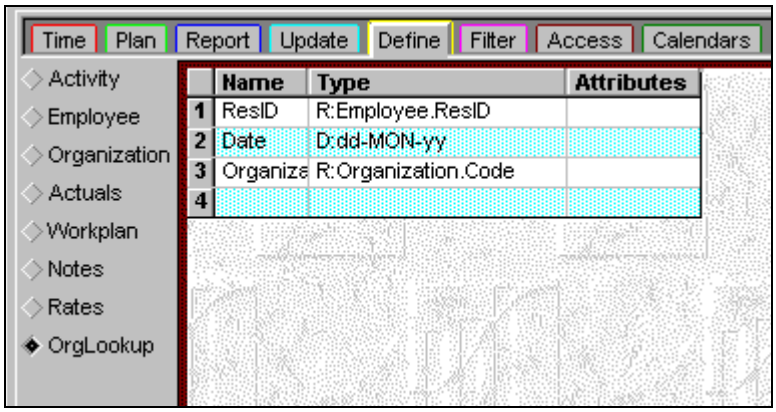


Specifying the Number of Field Slots

The next step is to define the **OrgLookup** fields. Enter **ResID** on the first line under Name. Choose **Reference** as the data type. Select the **Employee** dataset, and the **ResID** field. This first field is the Key Field which will be used to identify the Lookup record.

Add **Date** as the second field name (Date is a fixed field name that the software uses, and can not be altered). Set it to the **Date** data type (use any preferred format with month, day and year, and then **Start of Shift**). The Date field is defined to hold the date the change should take effect. AMS REALTIME Resources will compare the system date with the "change as of" date.

Add **Organization** as the third field name. This name should match with the name of the Organization reference in the Actuals table. Set it to a **Reference** type, selecting the **Organization** dataset and the **Code** field.



OrgLookup Database Definition

***Important Notes on Lookup Tables**: Lookup table entries must be maintained in ascending date order. The dates are "as of" dates, meaning that each key field match will use the contents of the lookup fields with the latest date. Each field that uses a lookup table to populate a field should have at least one entry in the lookup table.*

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Entering Lookup Reference Data

If you do not already have employee and Organization data in those tables, enter some test data to work with. At a minimum, you will need to populate the **Employee** dataset with a few entries that have **ResID** (a unique identifier), **Name** and **Login** defined. The **Organization** dataset should have at least two unique Organization Code and Title entries.

Now change back to the **OrgLookup** dataset in Update mode. Under the **ResID**, select each ResID from the popup, one per line. Under the **Date** field, enter the *beginning of this year*. Under each code, select an appropriate Organization.

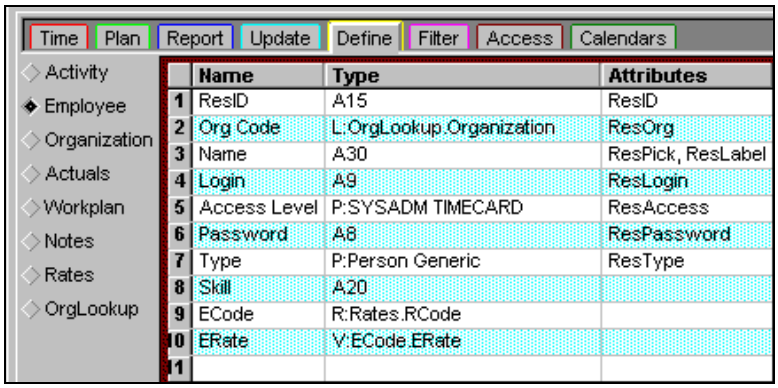
Now choose one of the employees that already has an entry and add a second entry for that **ResID**. Enter tomorrow's date under the **Date** field, and then set the **Organization** field to a new organization. This will allow actual entries from tomorrow forward to automatically use the employee's new organization Code.

Defining Fields that Use a Lookup Field

Now that we have the OrgLookup table defined and populated with data, we can create fields in the Actuals dataset and the Employee dataset that use the Lookup table to determine their value.

Change back to **Define** mode and select the **Actuals** dataset. Change the **Organization data type** to **Lookup**. A popup will appear that contains all Numeric datasets; choose the **OrgLookup** table from the popup. AMS REALTIME Resources will determine that correct value for the Actuals Organization field by finding the latest date reference in the OrgLookup Organization field that contains the ResID (the key field). Lookup data values are populated in a Numeric table based on a matching field name.

Now select the **Employee** dataset. Change the Type of the **Org Code** field to **Lookup**. Choose the **OrgLookup** table from the popup of numeric datasets. Now choose **Organization** from the field list. This is a lookup reference from a text dataset. This field value will be changed automatically when the system date passes the "as of" **Date** in the OrgLookup table.



A Lookup Field in the Employee Dataset

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Updating Information

Data Entry Tables

Data can be entered or edited by selecting the appropriate dataset and choosing **Update** mode. All records are maintained in order based on the key identifier field in the dataset, which must be unique.

Fields which are not displayed can be added by *clicking* the mouse in the white space to the right of the data table and selecting from the field name popup. Only those fields not already displayed are included in the popup list. Each selected field is added to the end of the table.

Changing the Table Layout

If a View has been saved in the current dataset, table fields can be moved or resized. Use View Save As... to name a View. To move a table field column, position the cursor at the top of the field heading. When the cursor changes to an open palm, *click* and *drag* the column to its new position and let go of the mouse.

To size the columns, position the cursor at the right edge of the field heading. When the cursor changes to a pointing finger, *click* and *drag* until the column is the desired size. If you size the column all the way down to its opposite edge, the column will disappear. Selecting **AutoResize** from the View menu will automatically size each column to the size allowed by the field definition.

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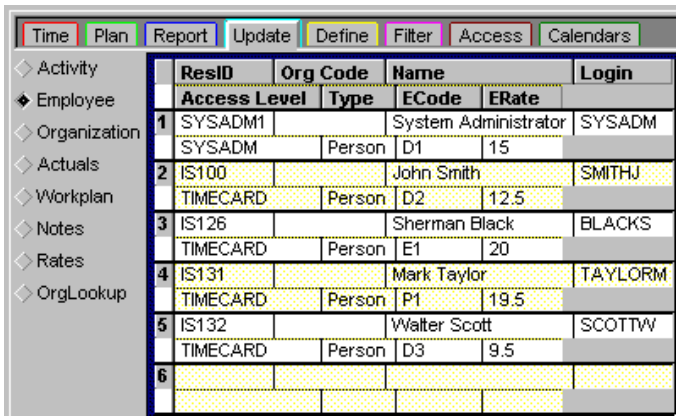

Entering / Editing Data in the Activity Dataset

Deleting Records

Records may be deleted by selecting the row or rows (*click* or **Shift**-*click* on the row line number) and selecting Delete from the Edit menu.

Saving the Data

When you have finished entering or editing information in the selected dataset and you are using a local database, select Save from the File menu. If you are using a server database, the server will automatically save the record.

Hierarchical Organization Data Coding

If the OrgCode field in the Employee dataset has a hierarchical structure, the positional values of the field will be used to establish "organizational ownership" of employees. The contents of this field are viewed in a hierarchical way to determine which employee data a user can view and which employees are available for Login or Plan access.

The coding works like a fixed length OBS (Organizational Breakdown Structure) code, which has no separating decimals and is padded to the right with zeros when a higher organizational level applies. The zeros are treated as wildcard digits, so that an employee that had zeros in the last two digits of his OrgCode number could access other employee records provided that the remaining OrgCode digits matched.

For example, an employee with an OrgCode of 373000 could plan work for employees with the OrgCode of 373450, 373457, and 373680, but *not* have access to employee with OrgCodes of 380000 or 374123.

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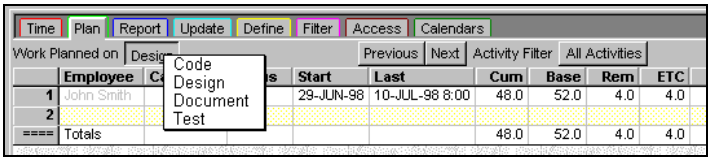
Planning Work

Selecting a Task for Planning

To access the **Plan** mode and create task assignments for your employees, select the **Plan** function. Work planning is performed by task. The upper left corner of the screen contains a box labeled **Work Planned on**. If the box contains Not Set, a task has not been selected. To get a menu of tasks, *click* in the box with the mouse.

The popup list of tasks will be generated from the current Activity dataset. To limit the list of tasks, select a filter from the Activity Filter box. For example, selecting a filter that selects only those tasks with a particular organization and project phase will list only those tasks in the popup. This makes it easier to group tasks for resource planning.



Selecting a Task for Planning

Assigning Employees to the Task

The current task will be displayed in the button on the information line. Any employees already assigned to that task will then appear in the table below. If no employees are assigned, or to assign additional employees, *click* in the first empty line under the Employee heading.

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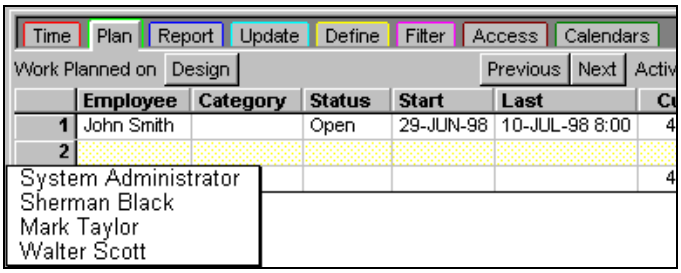

Assigning Employees to the Task

Planning the Workload

The **Start** field contains the first scheduled day of each task, while the **Complete** field contains it's scheduled ending date. The **Base** shows the number of hours planned on each task. **Rem** contains the remaining hours not worked, while the **ETC** contains the estimated hours to complete the task. **LOE** contains the Level-of-Effort that you are planning for the task. This can be put in as a percentage (e.g., 100%) or in hours per day (e.g., 8). If a percent sign does not follow the number, hours per day is assumed.

Overtime planning is entered using the OT fields; these values should be entered independently.

The Totals row provides cumulative planned figures by task. If the number of employees allocated to the selected task is more than will fit on the screen, those employees will scroll, but the totals row will remain locked in at the bottom.

Moving to Another Task

Along with the current task selection, the information line also provides a **Previous** and **Next** button. *Clicking* on the Previous button will select the previous activity for planning, and *clicking* on the Next button will move you to the next activity in the list for planning. Using these buttons to perform resource planning on a series of activities helps to ensure that no tasks are inadvertently passed over.

Filtering Activities

The **Activity Filter** button allows selection of a predefined Activity matching filter. Selecting an activity filter allows you to limit what appears in the popup by showing only those that match the specific criteria from the filter. The current activity filter is always displayed in the Activity Filter button.

Employee Availability Profile

When planning the resource assignments for a task, a list of resources will appear below next to the calendar. Next to each

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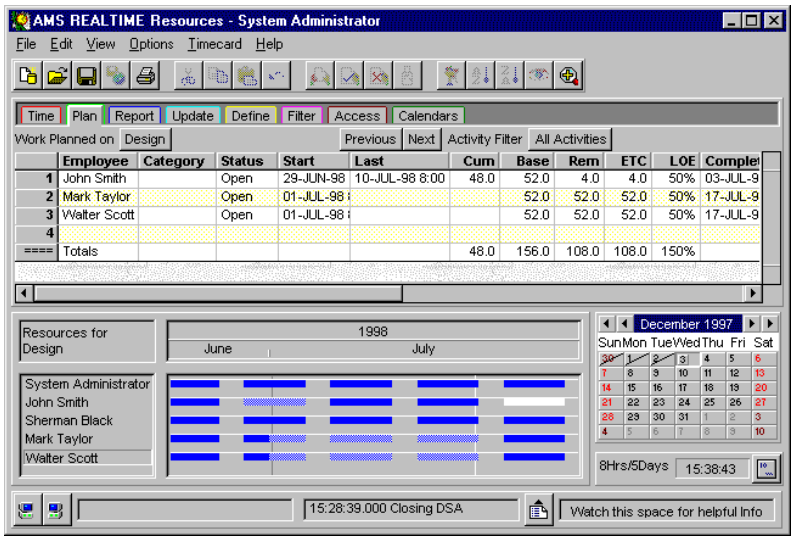
resource is a shaded bar which displays the availability profile of the resource. The bars are color coded: blue indicates availability, white indicates full utilization, and red indicates overcommitment. The shading indicates the degree of the availability status. For example, a light shaded red indicates that the resource is slightly overcommitted, while solid blue indicates that the resource is fully available.

Viewing an Employee's Task List

When you have resources assigned to a task, you can immediately see all the other tasks to which a resource is assigned by *clicking* on the resource name. The availability profile in the lower portion of the screen will instantly change to a Gantt chart view of all tasks to which that employee has been assigned. This allows you to see exactly what else the employee is planned to work on if a conflict exists.

The duration of each task is displayed as a white shadow bar. The planned work assignment is displayed as the colored and patterned portion of the bar, and the actual time that has been expended, or personal progress, is displayed as a dark progress bar on the lower half of the planned work bar.

To change back from the currently selected employee's task schedule, *click* on the employee to deselect. The task list will be replaced by the overall availability profile.


AMS REALTIME Resources - System Administrator
File Edit View Options Timecard Help
Time Plan Report Update Define Filter Access Calendars
Work Planned on Design
Previous Next Activity Filter All Activities
Employee Category Status Start Last Cum Base Rem ETC LOE Comple
1 John Smith Open 29-JUN-98 10-JUL-98 8:00 48.0 52.0 4.0 4.0 50% 03-JUL-9
2 Mark Taylor Open 01-JUL-98 52.0 52.0 52.0 50% 17-JUL-9
3 Walter Scott Open 01-JUL-98 52.0 52.0 52.0 50% 17-JUL-9
4
==== Totals 48.0 156.0 108.0 108.0 150%
Resources for Design
1998
June
July
December 1997
Sun Mon Tue Wed Thu Fri Sat
System Administrator
John Smith
Sherman Black
Mark Taylor
Walter Scott
8Hrs/5Days
15:38:43
15:28:39.000 Closing DSA
Watch this space for helpful Info

Viewing an Employee's Task List

Scaling the Calendar Timeline

The calendar timeline at the top of the employee's task list can be resized to show a section of the task list in more (or less) detail. To change the calendar scale, *click* the leftmost portion of the calendar timeline and drag inward, or *click* the rightmost portion of the

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calendar timeline and drag inward toward the center. The calendar timeline will automatically re-label as it is scaled.

Using Skill Codes

The dataset can be defined to allow activity requirements and resource capabilities to be matched. The Employee dataset must have a **Skills** field, which contains one or more skill codes for each resource. This field name is fixed; the name Skills can not be changed.

The Activity dataset must contain a field that contains a Filter name, such as LaborFilter. The named Filter specifies the filter which contains the skill set, which is defined with a match criteria. When an activity is selected for Planning, AMS REALTIME Resources will filter the resource list to only those employees which have the have the required skill set. This fieldname is not fixed; it is identified by the Attribute Key of **TaskResFilter**.

In the Employee dataset, the Skills field should contain a code which describes a skill, and possibly a level of proficiency. Employees can have multiple skills listed in this field. For example, if a company sets up a standard skill coding system where a two letter code indicates the skill and a :number from 0-4 indicates the level of proficiency, Walter Jones might have a Skill code of EE:4 CP:1. This might mean that he has advanced experience as an Electrical Engineer, and but only beginning skill as a C Programmer.

Resource Filters should be created for each of the basic skills levels required. Combination filters of mixed skill requirements can also be created. The name of the filter should be consistent with the skill set for easier usage.

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Filter Name	Skills
EE	=*EE*
CP	=*CP*
EE Level 4	=*EE:4*
EE and CP	=*EE* AND =*CP*
EE or SE	=*EE*
	=*SE*

A Sample Resource Filter Table

After Resource Filters have been created, the activity skill requirements field can be given the appropriate Filter name for the skill set. When planning the workload for an activity, only those employees that match the skill criteria will be available from the resource list.

Swapping Plan Assignments

Planned work assignments can be directly interchanged. This method can be used to swap generic resource assignments to specific employees, or to simply reassign work where an employee is overloaded.

To swap a planned resource assignment, select the current plan record by clicking on the row number. Then click on the desired resource from the list of available resources below. The old resource assignment will be marked as Deleted, and the new resource assignment will be added.

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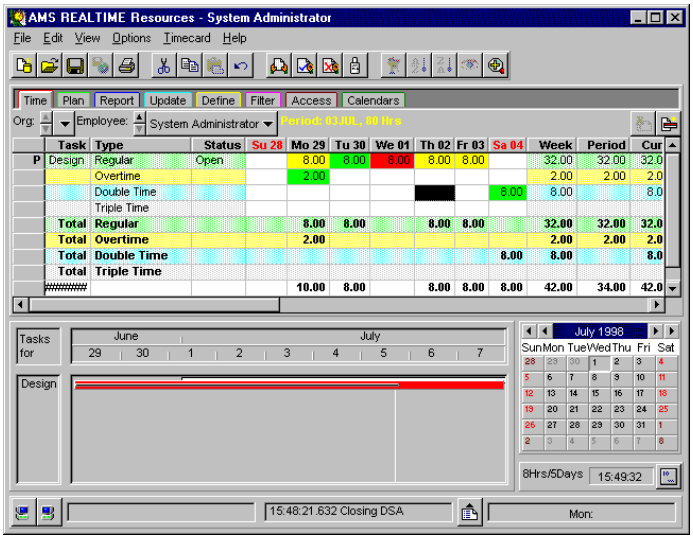
Posting Time Worked

Timecard Screen


AMS REALTIME Resources - System Administrator
File Edit View Options Timecard Help
Time Plan Report Update Define Filter Access Calendars
Org: Employee: System Administrator
Task Type Status Su 28 Mo 29 Tu 30 We 01 Th 02 Fr 03 Sa 04 Week Period Cur
P Design Regular Open 8.00 8.00 8.00 8.00 8.00 32.00 32.00 32.0
Overtime 2.00 2.00 2.00 2.0
Double Time 8.00 8.00 8.0
Triple Time
Total Regular 8.00 8.00 8.00 8.00 32.00 32.00 32.0
Total Overtime 2.00 2.00 2.00 2.0
Total Double Time 8.00 8.00 8.0
Total Triple Time
10.00 8.00 8.00 8.00 8.00 42.00 34.00 42.0
Tasks for
June July
29 30 1 2 3 4 5 6 7
Design
July 1998
Sun Mon Tue Wed Thu Fri Sat
8Hrs/5Days 15:49:32
15:48:21.632 Closing DSA
Mon:

An Employee's Time Screen

Reporting Time

To report the time worked on each task, select Time from the list of functions near the top of the screen. Several factors can determine exactly what options exist for the user, such the user's hierarchical OrgCode and the user's Access Level.

Your task list will be displayed at the bottom of the screen. The duration of the task is displayed as a white shadow bar. The planned work assignment is displayed as the colored and patterned portion of the bar, and the actual time you have expended, or personal progress, is displayed as a dark progress bar on the lower half of the planned work bar.

The calendar timeline at the top of the employee's task list can be resized to show a section of the task list in more (or less) detail. To change the calendar scale, *click* the leftmost portion of the calendar

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timeline and drag inward, or *click* the rightmost portion of the calendar timeline and drag inward toward the center. The calendar timeline will automatically re-label as it is scaled.

Most users will already have their Organization and Name appear in the buttons on the Time screen information line. Depending on the organization hierarchy which is defined, *clicking* on them may or may not provide popups which allow other users or organizations to be selected.

Some users may be allowed other access to user records, depending on their Access Level, the hierarchy code stored within their OrgCode, or a combination of both.

The Calendar will indicate today's date by drawing a rectangle around the date. The current date (which defaults to the system date) is highlighted, as though that calendar day were pressed down. The timecard defaults to the week in which the currently selected day is located.

The current week can be altered by selecting a different day on the calendar. To access a different month, *click* on the up and down arrows to the left of the month name. To access a different year, *click* on the left and right arrows to the right of the month name.

The current timecard period dates are displayed in the color black when the timecard is in the current week (based on your system date). If the timecard is in a past week, the period dates are displayed in red. If a future week is selected, the period dates are displayed in yellow.

If the employee has a long list of assigned tasks, the Calendar and Task List can be put away by dragging down on the boundary line between the two areas.

Click on the first timecard line entry to get a popup of all tasks which have been assigned to the employee. Only those activities with allocated time will appear in the popup. This information can only be entered or changed by someone with the correct Access Level.

Reporting Work Done on a Task

To report time worked on a task, *click* in the first empty line under the task heading. A popup will appear that allows you to select from the task list of your planned work. Choose a task from the list by *clicking* on the task name. The task will now appear on the timecard.

To access non-project tasks, hold down the **Alt** key and *click* under the task heading. Non-project tasks are typically categorized as time allocated for vacation, sick leave or a recurring overhead task.

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Timecard Fields for a Task

The Base field shows the total number of hours planned for you to work on the task. The Cum shows how many hours you have recorded to date. The Period show how many hours you have recorded in current reporting period. The Rem calculates how much of the original planned time is left (Base - Cum). The LOE shows your assigned percentage level-of-effort. The ETC is your estimate of how many hours it will take to complete the task.

If the task will take longer than originally planned, update the ETC field to your new estimate. The progress of the activity will be calculated using this estimate of completion.

Entering Hours Worked

Type in the time you worked on the selected task in the column underneath that day. Time can be entered in hours (e.g., 8 or 4.5) or as a percentage of effort (e.g., 50%).

You can also enter a total amount for the week (in hours or percent effort), and AMS REALTIME Resources will spread the total out in even increments from Monday to Friday. Even when the daily total is calculated from the weekly total by AMS REALTIME Resources, you can still go back and change a daily time entry, and the other totals will update accordingly. Enter zero (0) to clear an entry.

You can enter overtime into the columns labeled with OT in front of the day. AMS REALTIME Resources will differentiate these hours in the database under a separate Cost Center.

Double-check your timecard entries before logging out of the AMS REALTIME Resources or saving your changes!

To delete a task entry, *click* on the line number at the beginning of the line to select the task entry. Then select Delete from the Edit menu. The selected task line will be removed from the timecard.

A time window called a grace period is defined by the System Administrator which specifies how far a user can go back into the database to make a correction. If you know an error was made, but can not move to that Timecard entry to make the change, contact your Manager or System Administrator to make an adjustment.

Changing the Timecard Layout

Table columns can be resized or folded to modify the arrangement of fields displayed on the timecard. To resize a column, position the cursor at the right edge of the field heading. When the cursor changes to a pointing finger, *click and drag* until the column is the desired size. If you size the column all the way down to the left edge, the column will disappear.

To move the remaining rightmost columns down to another line (also called folding the table), *click* on the field where you want the break to occur and drag it downward. The remaining fields will then be underneath, and each task will now have two physical lines

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of information. To move the second line of fields back onto the first line, *click* on the first field title in the second line and *drag* it upward. When you let go of the mouse, the data fields will be in one line.

When the table is folded, the horizontal scroll bar is disabled. It is automatically re-enabled when the data fields are displayed on a single line. To see other fields that are off the line, you will have to fold those fields down to the next line. An empty field also exists in the field list that can be used underneath the Description field as a spacer to line up overtime fields underneath the regular day or the week fields.

Correcting an Entry

Once a timecard entry has been posted or has moved into a closed period (as defined by PERIOD and GRACEPERIOD in the configuration file) the timecard can not be edited. If a mistake has been made it can be changed by making a correction entry. The original value is not changed. The correction is made by adding the original value and the correction value together. Negative correction values are allowed.

Note: A Systems Administrator or any person with full access rights, can make corrections to timecards at any time. For other users, corrections can only be made when the following are true; The date of the time entry to be corrected has moved out of the grace period, the time entry must be approved and the user must have full access rights to timecard as defined in the middle position of the Timecard column in the access table, e.g. xFx.

On the Timecard, correction entries are displayed on three lines. For example, if the correction is being made to Regular time only, the first line displays the reconciliation value (Original + Correction), the second line displays the adjustment (Correction Value), and the third line displays the original value. Under the type column you will see 'Regular' for the first row, indicating that the time you are correcting is regular, rather than overtime hours. The second row is labeled 'Adj.' This is the row you use to enter your correction, and the third row 'Orig.' is the original hours entered.

How to Correct an Entry

1. In the Timecard tab, click in the cell to be corrected.
2. Click the correction button on the toolbar. The row for the selected cell will expand to three rows.
3. Enter your correction number in the 'Adj.' row under the day to be adjusted. You can enter negative numbers to deduct hours from the original figure.
4. Press the Tab key to see the corrected total calculated in the 'Regular' row.

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Audit Trail

This method of correction has been developed to give an audit trail of changes made to originally posted timecard information.

Charge Types

Defining Overtime and Other Charge Types

Multiple charge types can be defined, allowing users to enter hours against many different charge categories such as overtime, Double time, Triple time or even Travel time. The only limitation to the number of charge types definable is the 128 character limit on the pick field.

Each type may be selected on the Timecard by clicking on the Type field and making a selection from the popup list. Type selection is independent for each activity. Subtotals for all charge types in use are automatically displayed. If more than one type is used on a Timecard a grand total is also calculated.

Note: If you add additional charge types to the Timecard Tab and do not place any actuals against them, those charge types will not remain on the timecard when you go to another view and then return to the timecard. If you do this, you will need to re-select your charge type from the pick list. Once actuals are booked against any charge type, it remains on the timecard permanently.

How to Define Charge Types

1. Click on the define Tab.
2. Click on the Actuals diamond to select the Actuals definition table.
3. In the 'Type' field's Type cell, hold down the Ctrl key and click the mouse pointer to place the edit cursor.
4. Enter a comma at the end of the last entry in the Type field. (In the default database the existing Charge Type descriptions are: Regular, Overtime).
5. Add your new Charge Type description after the comma.

Note: If you are adding a Charge Type description that has two words, e.g. Double Time, be sure to enclose the two words within double quotes, i.e. "Double Time". Otherwise they will appear as two separate entries in the popup list.

Adding Notes to your Timecard

Notes with additional information about the hours booked can be attached to any non-zero cell on the timecard. This is done by employing an extension dataset that is attached to the Actuals dataset. By selecting a non-zero cell and clicking on the Push-Pin

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Notes button on the toolbar, a note can be attached to the cell. You can identify a cell with a note attached by the turned down top left corner of the cell.

How to Setup Notes on Timecards

First you need to create an extension dataset and attach it to the Actuals dataset.

1. Click on the Define Tab.
2. Click the Create New Dataset button.
3. In the New Dataset Name: dialog, enter a name for your notes dataset and click OK.
4. In the New Dataset Type dialog, Click on the Text button.
5. Click on your new dataset's diamond button to open it.
6. In the Name column, create a name for your field, e.g. "Details".
7. Click in the Type column and from the pick-list choose Alpha.
8. In the Number of Characters dialog enter the number of characters you need for your notes field and click OK. There is a limit of 512 characters on Alpha fields.

You have now created your notes dataset. Next this must be attached to the Actuals dataset as an extension.

1. Click on the Define Tab.
2. Select the Actuals Dataset.
3. Click in the Type column of the 'Reserved' field.
4. Choose 'Extension' from the popup list.
5. From the next popup list, choose the name of your newly created extension dataset.

You have attached your new extension dataset to the Actuals dataset. You will be able to see the extension fields by going to the Update Tab and Clicking on the Actuals diamond button. The extension dataset will appear at the end of the normal Actuals field columns.

Note: Before the next step it will be necessary to **shut down AMS REALTIME Resources** and restart the program. Some changes such as the creation of new datasets require a restart of the program before they will come into effect.

Adding a Note to a Time Cell

1. Click on the Time cell you wish to attach the note.
2. Click the Attach Note button on the toolbar.
3. In the Dialog, enter your desired text in the text field.

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4. Click OK.

Once a note has been added to the Time Cell, you will see the top left hand corner of the cell appears to be turned down. You can see all of the attached notes in the Update Tab, Actuals dataset.

Color Coding

Color coding is used throughout the program to assist in its readability and usability. Some of the color coding is insignificant and is simply there to help your eye follow the rows across large areas of data. Others are very specific to the state or type of data in a particular cell. These specific colors are described below.

'Traffic Light' Approval status:

RED = The actuals in the cell have been rejected.

YELLOW = The actuals in the cell have been submitted.

GREEN = The actuals in the cell have been approved.

Charge Types

For each new charge type you create, a new color for its row is created. For example, if you have three charge types and all three are open on a record, the colors for each row would be as follows:

Regular (or first defined type) = Light Green

Overtime (or second defined type) = Light Yellow

Double Time (or third defined type) = Light Blue

Triple Time (or fourth defined type) = Light Gray

Sub-totals for each of these would appear in there respective color rows at the bottom of the Timecard display. Although you can define more than eight Charge Types, new colors are only created for the first eight, thereafter the rows are all white.

Calendars and Days

Non-working days are labeled in Red and days in a closed period are labeled Dark Grey.

Adding New Activities

The New Activity button is located near the upper right-hand corner of the Time screen. *Clicking* on this button allows a user to add a new activity and also add himself to the Plan for that activity. This allows the user to get the new activity on their task popup when entering timesheet data.

When adding a new activity, the user must create a unique Task ID and enter the basic task information, including the key fields.

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Field Name	Description	
Task ID	a *unique* task identifier	(key field)
Description	task description	(key field)
Start	start date of the task	(key field)
Complete	complete date of the task	(key field)
Level	% of time planned for task	
other	*any other fields which are not calculated or virtual fields*	

When the user enters this information and *clicks* on the **New Activity** button, a new activity is created in the Activity dataset and the currently logged in user will be added to the Plan record for that task. An Activity ID naming system for user-added activities can assist in differentiating between each type.

To clear the current New Activity screen and start over, *click* on the **Clear** button. When you are finished adding new activities, *click* on the **Done** button to return to the time sheet.

This button can also be used when an employee wishes to track time spent on tasks that are not of general interest to management, such as personal time management tasks. Set the contents of the Type field to anything that begins with ***N*** to indicate a non-project task.

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Non-Project Tasks

Each Activity record has a Type field, which is used to categorize tasks. Any Type that begins with the letter ***N*** is considered a non-project task, and the actuals for that task will not be exported.

Non-project activities do not appear on the timesheet task list by default. To get a popup of non-project tasks, hold down the Alt key and click in the task area of the timesheet.

Posting Time for Unplanned Work

When a "drill down" filter is created for the Activity dataset that filter is specified in the Timecard access code, the **Find Existing...** option will be appended to the end of the user's task list. If the item **Find Existing...** does not appear at the bottom of your task list, then your AMS REALTIME Resources database has not been configured for drill down access to other unplanned tasks.

Selecting **Find Existing...** allows a user to select a new task by choosing categories from successive popups down to the detail task level, whether they were planned to work on that task or not. For example, a user could choose a task by first selecting the Project, then the Phase, and then the Task from popup lists that contain all the current choices in the dataset. Even if he was not planned to work on that task, he could then post his time. Of course, unplanned work hours can still be subjected to the Approval process.

Find Existing... can also be used with predefined WBS tables for unplanned work.

Work Breakdown Structures

WBS Concept

Many organizations which are embarking on a time tracking system will need to book time against tasks which are part of an overall Work Breakdown Structure. AMS REALTIME Resources has the capability to model highly complex WBS Structures without the necessity of having to create very large and complex databases.

AMS REALTIME Resources is designed to allow an individual task at the detailed level to be associated with any other required components in a hierarchical structure. This is achieved in the following way:

One or more data tables can be defined by the user to contain all the required elements in specific levels of the hierarchy. Parent Child relationships can then be defined between these data tables. See the following diagram for an example.

Level 1 (Program dataset)

IT Program

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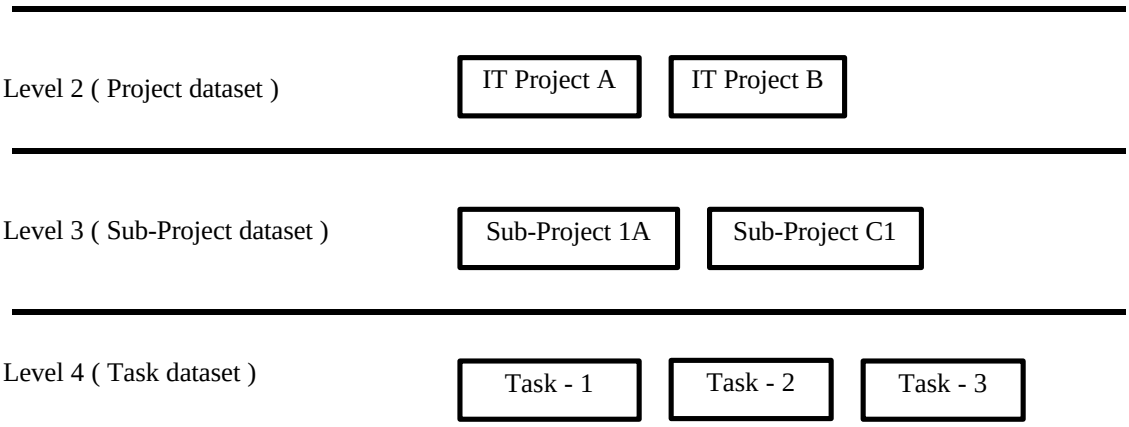

At this point, it does not matter which branch of the structure a task belongs to, provided a data table has been defined for each level and each element has been specified in that table. In this case, IT Program would be in the first data table, this table could be called Program.

Below this would be another data table, perhaps called Project, containing IT Project A, IT Project B, and so on, down to the task level.

The real power of AMS REALTIME Resources is that you can then associate any element in one table with another in a different level, using parent and child relationships. You may choose not to set up specific relationships, leaving a level open to selection from any level above it. That means that a user could book time to Task 1, under IT Project 1 in one week, and then book time to Task 1 under Sub-project C1 the next week.

Your drilldown through the structure can be fixed or variable, depending on the requirements of your organization. This means that detailed task entries do not have to be repeated each time the same type of task is carried out in different projects or locations. This keeps the database small and simple, saves repetition and saves maintenance overhead.

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Program Table

ID	Description
PG1	IT Program

Project Table

ID	Description
ITA	IT Project A
ITB	IT Project B
ITC	IT Project C

Sub_Project table

ID	Description
SA1	Sub-project A1
SC1	Sub-project C1
SC2	Sub-project C2

Task table - Task = PG1:ITB:SC2:Task 1

ID	Description
T1	Task 1
T2	Task 2
T3	Task 3

A Sample WBS Drilldown Source Table Hierarchy

Using the mouse, the user will be able to select from a popup list to drill down and book time on Task1 in the following manor:-

Click on the Timecard task selection area -

- IT Program

    - IT Project B

        - Sub-project SC2

            - Task 1

Booking time to PG1:ITB:SC2:Task 1 (ID's or full names can be viewed)

or

- IT Program

    - IT Project C

        - Sub-Project SC1

            - Task 1

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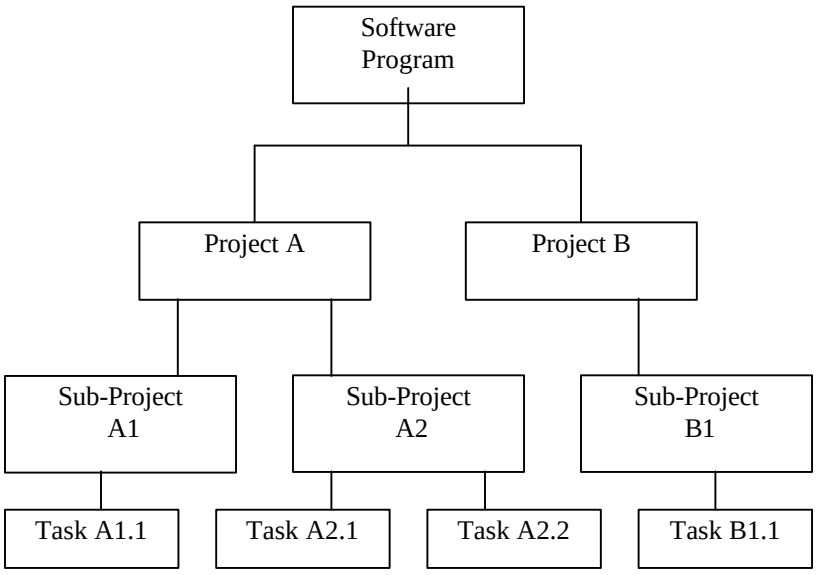
Setting Up a Work Breakdown Hierarchy

First, create a database in the normal way. Once you are logged in and have defined a system administrator, go to the 'Define' view. We are going to model a very simple Work Breakdown Structure to start with. When complete, users will be able to 'Drill Down' through this structure to book time to tasks.



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Defining the WBS Tables

In the Define view, firstly create a dataset for each WBS level using the New button that appears below the existing datasets. In the example provided, we will name them 'Software Programs', 'Projects' and 'Sub-Projects'. Task definitions (at the workpackage level) will occur in the standard Activity dataset, as usual.

Having created our three WBS datasets, we will enter the basic field definitions for each. For this example, the fields have been kept very simple, but as much information as required may be stored.

	Name	Type	Attributes
1	ID	A4	
2	Title	A40	
3	Child	A40	
4			

Software Programs Dataset Definition

The Software Programs dataset contains an ID field (to contain a unique identifier), a descriptive Title, and a Child field. The Child field will contain the relationship to lower WBS levels. The Projects dataset also contains these same fields, but also has an additional Parent field that will eventually contain a relationship to the higher level table. We will come back to these tables later to further define these Parent Child relationships.

	Name	Type	Attributes
1	ID	A4	
2	Title	A40	
3	Parent	A40	
4	Child	A40	
5			

Projects Dataset Definition

The Sub-Projects table will contain similar ID and Title fields, but will only contain a Parent field which will later define the relationship to Parent tables.

	Name	Type	Attributes
1	ID	A4	User6ID
2	Title	A40	
3	Parent	A40	
4			

Sub-Projects Dataset Definition

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Note that in all three tables, the Attributes column contains a filter, User*ID. This should be placed against the component of data you wish to link with. In these examples we are using the ID field, since it will be our unique identifier.

Defining the Activity WBS Fields

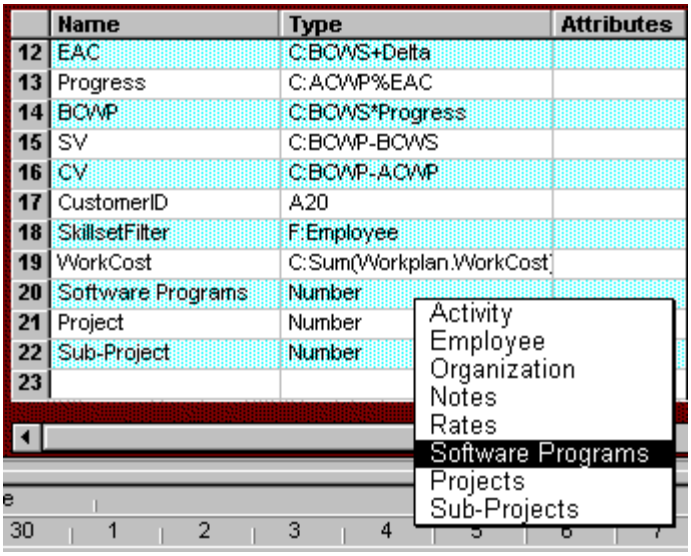
Before we can define Parent Child relationships for the new WBS tables, we must add a field in the Activity table for each of these tables. This will hold the data selection from each WBS table when an activity is defined or selected.

In Define mode, select the Activity table and add three new fields: **Software Program**, **Project** and **Sub-Project**, which will related to the datasets we have just constructed, , although they can be named anything. Ultimately, these three fields will contain the hierarchical path to which that specific activity or task belongs.

This process enables the drilldown capability that will allow employees to identify tasks through the WBS hierarchy.

In the Type column next to the highest WBS table reference field (Software Programs, in our example), select **Drilldown** from the popup.

A popup menu will appears that contains the names of all text type datasets. Select the name of the dataset your field is associated with. For this example, we will choose **Software Programs**.



Selecting the Related WBS Table

Next, select the field that you want to appear in the WBS drilldown popup to select this level. This field will go back to the Activity table once a task has been selected from this WBS table. For this example, we will select the **Title** field.

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A marker is a label that is given to a WBS drilldown structure. All levels of a WBS will share the same marker name. Select **Create Marker…** to give a name to your WBS drilldown structure. For this example, we will name our marker **IT_WBS**. If you have already created a marker name, you can select it from the list.

A WBS Marker Name

The Attribute for the highest level WBS reference field must be set to **TaskDrilldown**. This tells AMS REALTIME Resources which table to start in when selecting a task through the WBS tables.

	Name	Type	Attributes
12	EAC	C:BCWS+Delta	
13	Progress	C:ACWP%EAC	
14	BCWP	C:BCWS*Progress	
15	SV	C:BCWP-BCWS	
16	CV	C:BCWP-ACWP	
17	CustomerID	A20	
18	SkillsetFilter	F:Employee	
19	WorkCost	C:Sum(Workplan.WorkCost	
20	Software Programs	W:Software Programs.Title	TaskDrilldown
21	Project	Number	
22	Sub-Project	Number	

The First Activity WBS Reference Completed

Do the same with the other activity reference fields, choosing the name of the dataset that matches the fields name in each case. The end result should look something like that picture below:

	Name	Type	Attributes
12	EAC	C:BCWS+Delta	
13	Progress	C:ACWP%EAC	
14	BCWP	C:BCWS*Progress	
15	SV	C:BCWP-BCWS	
16	CV	C:BCWP-ACWP	
17	CustomerID	A20	
18	SkillsetFilter	F:Employee	
19	WorkCost	C:Sum(Workplan.WorkCost)	
20	Software Programs	W:Software Programs.Title=WBS1	TaskDrilldown
21	Project	W:Projects.Title=IT_WBS	
22	Sub-Project	W:Sub-Projects.Title=IT_WBS	

Activity WBS Reference Fields

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Entering Data in the WBS Source Tables

Now we will enter data into the WBS source tables. From Update mode, enter names for all levels of WBS down to task details.

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Software Projects dataset

ID	TITLE
SP01	Technology Development
SP02	Program Maintenance

Projects Dataset

ID	TITLE
PR01	New Product Research
PR02	Laser Programming
PR03	Year 2000 Compliance
PR04	Database Reengineering

Sub-Projects Dataset

ID	TITLE
SP1A	Internet Search
SP1B	Information Integration
SP2A	Research
SP2B	Prototype
SP2C	Q&A Testing
SP3A	Identify Problem Areas
SP3B	Recode and Test
SP4A	Update Specifications & Design
SP4B	Coding & Testing

Activity Dataset

ID	Description	Start Date	Comp. Date	LOE
100	Requirements	01-JAN-98	01-FEB-98	100%
200	Coding	01-FEB-98	01-MAR-98	100%
300	Testing	04-MAR-98	15-APR-98	100%
400	Design	11-MAY-98	20-JUL-98	100%

The workpackage level activities should also be entered into the Activity table, using the popup references to each source table. The start and complete dates may be omitted if you wish, allowing the workplan to be created as time is posted against each task.

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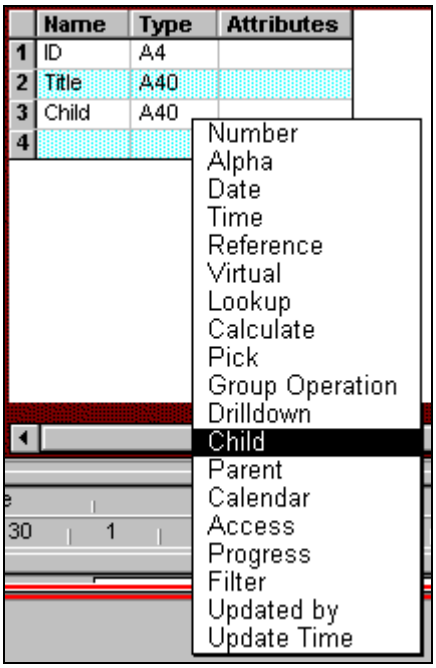
Defining the WBS Relationships

Return to the Define view and select the high level WBS source table, which is **Software Programs** in our sample..

Click in the Type column for the Child field, and choose the **Child** type.



Selecting a Child Relationship

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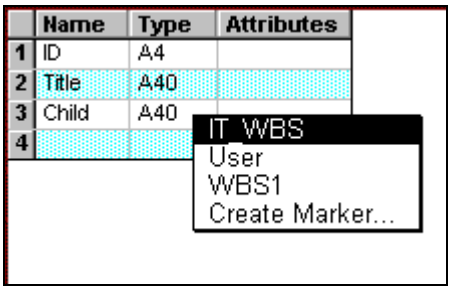
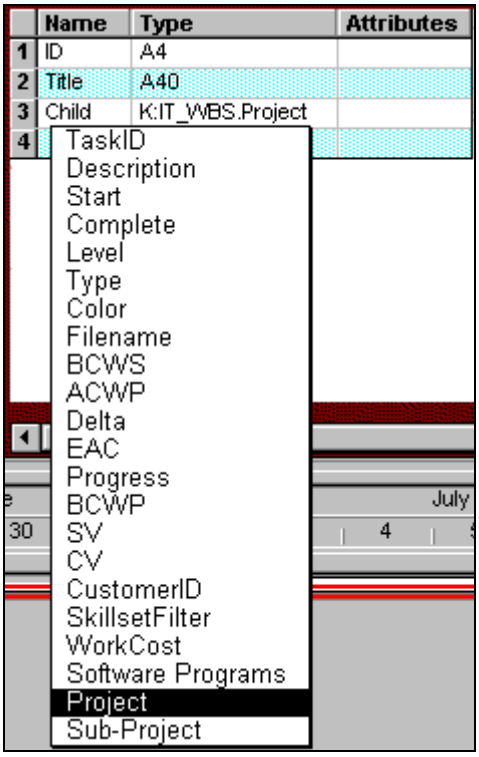
Select the WBS Marker name from the popup, which is **IT_WBS** in our sample.

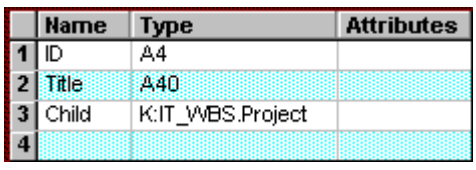


Choosing a WBS Marker

Then select WBS dataset that is the next level down, which is **Projects**.



Selecting the Dataset for a Child Relationship



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A Completed Child Relationship

We have just created a child of Software Programs. When defining relationships for the **Projects** dataset, both Parent and Child relationships will be defined, as this has one level above and one level below.

	Name	Type	Attributes
1	ID	A4	User5ID
2	Title	A40	
3	Parent	O:IT_WBS.Software Programs	
4	Child	K:IT_WBS.Sub-Project	
5			

Parent and Child Relationships

It is worthy to note that you don't always have to identify a parent, and you don't always have to define a child. This is what makes AMS REALTIME Resources far more powerful and flexible. It allows tasks which are common to more than one project to be open to all levels above, or tasks that are specific to one project to be confined to only that selection.

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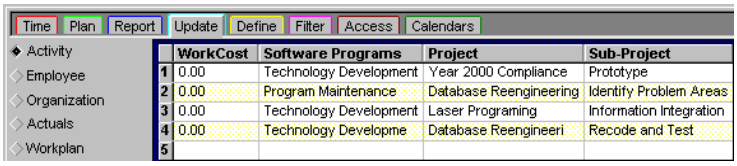
This is an example of how the Activity dataset might look.



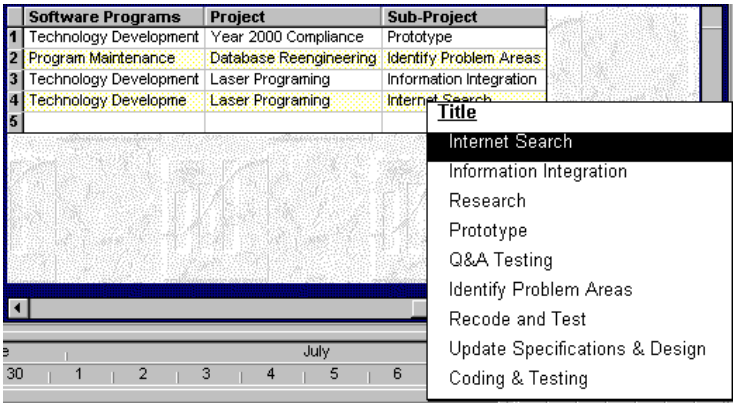
	WorkCost	Software Programs	Project	Sub-Project
1	0.00	Technology Development	Year 2000 Compliance	Prototype
2	0.00	Program Maintenance	Database Reengineering	Identify Problem Areas
3	0.00	Technology Development	Laser Programing	Information Integration
4	0.00	Technology Developme	Database Reengineeri	Recode and Test
5				

A Sample Activity Dataset with WBS Reference Fields

Note: In more complex scenarios it is a good idea to split up the ID codes between the levels and then merge them to give a unique Activity ID code when a drill down has been completed. That way, the ID code of a newly created task gives a clear pointer to its position in the structure.

Working With the Structure

When entering data into Activity fields that reference WBS source tables, all of the entries in the highest level WBS table will be presented in a popup. Each level will be presented in succession, showing the subsets levels which are defined underneath, until the lowest level is defined. If only one option exists for selection, that selection will be automatic.



	Software Programs	Project	Sub-Project
1	Technology Development	Year 2000 Compliance	Prototype
2	Program Maintenance	Database Reengineering	Identify Problem Areas
3	Technology Development	Laser Programing	Information Integration
4	Technology Developme	Laser Programing	Internet Search
5			

WBS Level Selection in the Activity Table

The sample that has been provided leaves all entries of each WBS level open for selection, allowing for maximum flexibility. However, there may be some sub-levels which apply only to specific branches of the WBS structure, because they are too specialized to apply to all branches.

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The Parent field of a WBS source table can be populated with an entry from the higher level WBS. For example, go to the Projects table and find the entry for PR02, Laser Programming. Click in the Parent field and select Technology Development.

Now, if Technology Development is the selected path, Laser Programming will appear in the next level for selection. But if Program Maintenance is selected, it will not be one of the choices. It is also important to note that tasks which do not have a parent specified will appear as available to any branch of the structure at that level. This is very powerful and gives AMS REALTIME Resources a great deal of flexibility for the user.

Time Entry

When an employee clicks in the Task window to choose an item for time entry, a list of his current tasks appears, including an entry at the bottom for **Find Existing** and **Create New.**

Find Existing will produce a popup of the current WBS table hierarchy until the lowest level selection determines the task. **Create New** will allow the user to enter new tasks, picking the WBS source table selections from the popups.

The Outcome and Benefits of WBS Configuration

Once all this configuration work has been carried out, the end user for the product will be able to drill down through a specific hierarchy to enter the information they need. This means that an end user can be given the capability to create new booking scenarios within the predefined constraints of the Work Breakdown Structure. Common tasks which occur over a number of different projects do not have to be re-created or repeated hundreds of times all over the database. It also means that every booking scenario does not have to be pre-planned or pre-empted, saving possibly hundreds of rows of data and hundreds of hours of work.

Drilldown Filters

Find Existing

If you have a WBS defined, the Find Existing option will allow the use of drilldown within that structure. However, if no WBS tables are defined, Find Existing will look in the Time entry of the Access dataset to see if a drilldown filter has been defined. If so, it will use the drilldown filter to allow selection of tasks based on a particular order, but not necessarily a hierarchy.

Note: In the client configuration file, the configuration switch DRILLDOWN= N(default) must be set to 'Y'. The default will apply if the DRILLDOWN switch is omitted from the configuration file.

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Create New

This menu option will only appear if a complete WBS structure has been defined.

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Filters and Views

Introduction

Filters are a way of applying matching criteria to look at only certain portions of the data. This is extremely useful for generating reports, since non-pertinent data can be removed from the display or reported output without actually removing any data records. This can also protect “need-to-know” information.

Any filter name that is preceded by an underscore (e.g., **_Unfinished Work**) is a global filter, which comes from the global preference file. These filters can only be created by a System Administrator, or someone with sufficient access privileges. If the filter name does not begin with the underscore, it is a filter that was created by a user and stored in their local preference file.

When filters are first created in a **local** dataset, the **underscores *should not*** be entered with the filter name. Filter names that are preceded by an underscore in local mode are ignored when Resources updates information in the local preference file. This occurs so that the globally defined filters do not write back to the user's local preference file. Once the preference file is copied out to the server and used as a global preference file, the system will automatically add the underscores to identify global filters.

When a System Administrator wishes to add a global filter while running in **client/server mode**, the **underscore *should*** be use at the beginning of the filter name. This tells the system that it is a global filter, and should be stored in the global preference file and should be made available to the general public.

Sort Filters

Sorts can be stored by selecting the Filter function, choosing a dataset, and naming the sort under the Filter name. Enter ^1 under the primary sort field, ^2 under the secondary field, etc., on the same line. The *Up Arrow* (or caret) signifies an ascending sort, which is the only sort that has been implemented at this time. When you are updating in that dataset, Filter Sort will produce a popup with all the Sorts you have created for the current dataset.

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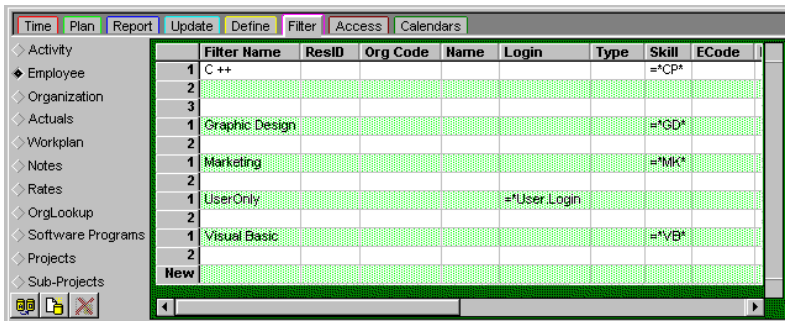

AND and OR Logic Filters

Creating a Drill Down Activity Filter

A drilldown filter can be created to produce popup menus that allow users to post time on unplanned work. This is done by specifying the fields which will be used for popup selection of tasks.

For example, assume that a filter called **DrillDown** is created where Project has a **^1** sort key, and Phase has a **^2** sort key, and Description has a **^3** sort key. When the Timecard access code is set to **RRR:DrillDown**, users will be able to select a task by first selecting a Project, then a Phase, and then a Description from the current activity dataset.

Once the filter is created and specified in the user's Timecard access code, the **Find Existing...** option will be appended to the end of the user's task list. The **Find Existing...** option will not function unless the Timecard access code has an appended filter.

Selecting **Find Existing…** allows a user to select a new task by choosing categories from successive popups down to the detail task level, whether they were planned to work on that task or not. For example, a user could choose a task by first selecting the Project, then the Phase, and then the Task from popup lists that contain all the current choices in the dataset. Even if he was not planned to work on that task, he could then post his time. Of course, unplanned work time can still be subjected to the Approval process.

Matching Filters

Click on the Filter tab and then the dataset. A list of current filters will be displayed. Enter a name at the New line under the Filter Name column to create a new filter. The filter name will be used later for popup selection. Enter the filter criteria underneath the appropriate fieldname(s).

For example, to list only those Task IDs which begin with the letter C, type = **C*** under the Task ID column. Filters use the following logical and comparative symbols (case sensitive):

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>	greater than
<	less than
>=	greater than or equal to
<=	less than or equal to
=	case insensitive equal
==	case sensitive equal
*	wildcard
?	single character wildcard
AND	both conditions true
OR	either condition true
IN date1 ~ date2	within the given date range

Filter Operators

The Current User Subset

When a user logs into AMS REALTIME Resources, the employee dataset is searched for an exact match between the Login ID and Password which are entered. When it finds a match, it keeps a pointer to the current user, which is how the software knows who is logged in and what the current Access Level should be.

Any of the employee information fields for the current user can be referenced through the **^User** subset (case sensitive!). For example, to create a match filter where only the currently logged in user's employee data will show, select Filter and the Employee dataset. Next to the New line, enter the filter name **User Only**. On the same line under the Login column, type the following match criteria:

= ^User.Login

If the User Only filter name is added to the default user Access Level for the Employee dataset, whenever an employee logs in, they will be able to view their own Employee information, but not that of anyone else.

To add this filter to the Access table, the System Administrator would select the Access function. On the Default row (blank) and under the Employee column, the following access code should be entered:

-R-:User Only

This would allow each user to view only their own Employee information, but not examine any of the filter criteria or data definitions. More information can be found on Access codes in the Access Security Controls section of this manual.

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Views

Views are basically the program "remembering" how the screen is setup. A view is stored internally and keeps track screen layout information: which fields are displayed, their column position and size, etc. Each View is saved with a name specified by the user. Later, selecting that View name from the popup will cause the screen to automatically reformat to the previous layout. This view can also be renamed or deleted from the Format menu. There is no limit to the number of views which can be stored in the dataset.

As with filters, when views are first created in a **local** dataset, the **underscores *should not*** be entered with the view name. View names that are preceded by an underscore in local mode are ignored when Resources updates information in the local preference file. This occurs so that the globally defined views do not write back to the user's local preference file. Once the preference file is copied out to the server and used as a global preference file, the system will automatically add the underscores to identify global views.

When a System Administrator wishes to add a global view while running in **client/server mode**, the **underscore *should*** be use at the beginning of the view name. This tells the system that it is a global view, and should be stored in the global preference file and should be made available to the general public.

Generating Reports

Introduction

AMS REALTIME Resources report functions let you “slice and dice” your stored information in an unlimited variety of ways. By combining sort orders, time period selection, collection bin size, headings, totals and subtotals, and selection filters, your report output can present exactly the information that is required. These reports can be saved under you own report names for instant recall. Reports can be printed to any print device which is installed on the host system.

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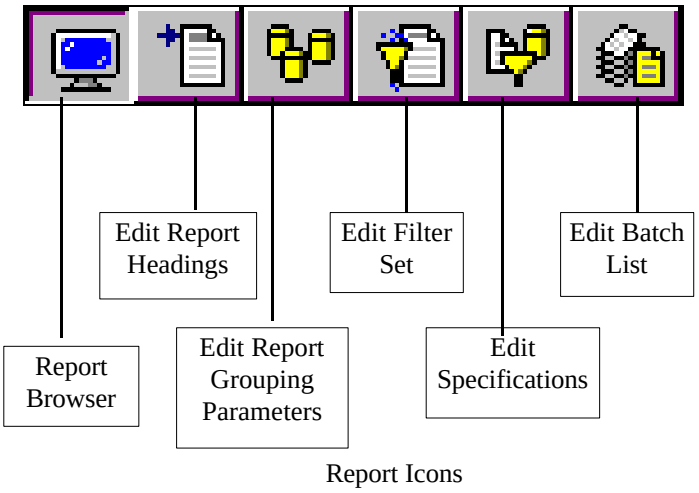
Function Icons

A set of icons has been added to represent basic functions.



Report Icons

Report button

Clicking on the **Report** button will provide a popup of all report names which have been defined in the Specifications table. Reports set up from the Display mode can be saved under a Report name. This name can be recalled for later use, or later modified from the Specifications table.

Headings button

Clicking on the **Headings** button provides access to the Headings table. The Headings table allows you to define specific report heading formats. Once a Heading name has been defined, only the name has to be selected in order for all of the components to appear in the report. A Heading can have multiple lines.

To create a Heading, type a Heading name next to the word **New** in the Heading Name column. This Heading name will appear in the popup when you use the Heading button to select a report heading, so the name shouldn't be too long.

On the same line, *click* under the column labeled **Left**. A popup will appear with several fieldnames to choose from, such as ^Heading (the Heading name), ^Title (the Report name), ^Page (the current page number or the report), ^From and ^To (the Report Period dates), and many more. *Click* on any fieldname to select it for that heading position. Do the same for the **Center** and **Right** columns.

To enter a text string instead of picking a fieldname from the popup, hold down the **Ctrl** key and *click*. A cursor will appear in place of the popup. Type the text string that should be displayed.

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A blank line will always be displayed at the bottom of each heading. As soon as that line is occupied, a new line will appear. You can use as many lines as you need for the report Heading, but take care that you don't go overboard and make the Heading bigger than the body of the report.

From the Report Display mode, *clicking* on the **Heading** button will provide a popup list of all the Heading names which have been defined in the Headings table. Selecting a Heading name from the list will determine which heading is used for the report. An upper left, top center and upper right value can be selected for each heading. These values can be fields, which are chosen from a popup and are replaced with the appropriate information when the report generates, or they can also be text strings that never change from report to report.

Groups button

Clicking on the **Groups** button will provide access to the Groups table. This table lets you define how the report information will be grouped, or ordered.

To create a Group, type a Group name next to the word **New** in the Group Name column. This Group name will appear in the popup when you use the Group button to select a report grouping, so the name shouldn't be too long.

On the same line, *click* under the column labeled **Dataset.** A popup will appear that contains all the dataset names that have been defined in your AMS REALTIME Resources database. Choose the dataset that contains the primary report grouping.

Still on the same line, *click* under the column labeled **Field.** A popup will appear that contains all the field names in the dataset. Select the field that will be used as the primary search field for reporting. This field will be used as the internal search criteria, but does not have to be displayed in the report.

In the next column, click under the column labeled **Display**. The selected field is the field which will be displayed in the report. For example, perhaps the employee number is the field which is used for the internal search for actual time records, but the employee last name is the information that is printed in the report. The Field column would contain employee number and the Display column would contain the last name field.

A **Heading** name (which must be predefined in the Headings table) can be supplied for each Grouping. To select a Heading name, click under the Heading column and select a Heading name from the popup.

If desired, Subtotals can be included with selected report groupings. To have the report calculate subtotals, click under the **Subtotal** column and select **None**, **Before** or **After**. Selecting Before will place the subtotal for that group on the same line (before any lower

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groups are displayed). Selecting After will produce a subtotal for the group after any subsequent lower groups.

The last column, labeled **Break**, is used to determine how the groups are separated: with a line break, a page break, or not at all. Selecting **None** keeps the report lines together, with no separation. Selecting **Line** will force a blank line between each group. Selecting **Page** will force a page break (including a new heading) between each group. Each line within a group can have its own Break selection.

From the Report Display mode, *clicking* on the **Group** button will provide a popup list of all the Group names which have been defined in the Groups table. Selecting a Group name from the list will determine the order in which the information is collected and grouped in the report. For example, a Group called EMPACT might use a major grouping by employee and a minor grouping underneath for each task the employee is working on.

Group names can select information for the report by matching on one field, but display the contents of another field. Headings, subtotal specifications, and line or page breaks can also be selected and stored with the Group name.

Filters button

The **Filters** button allows you to choose a named combination of filters for sorting and filtering the report data. Each set of filters is defined in the Filters table and has a Filter Set name. This allows combinations of several different filters to be applied, either from the same dataset or from different datasets.

Report Period dates

The **Report Period** specifies the boundaries of data collection from the database. The first date is the beginning report boundary, and the second is the ending report boundary.

To change the report period, first *click* on the button in front of the date. Then use the Calendar to select a new date by clicking on the new report boundary. Change the other Report Period date in the same manner.

Use the Up and Down arrows to the left of the current calendar month label to move the calendar Backward and Forward a month, respectively. Use the Left and Right arrows to the right of the current calendar month label to move Backward and Forward a year, respectively. Click on the current calendar month label to get a popup list of months. Selecting a month from the popup will move directly to that month, but retain the current year.

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Summarized By button

Click on the **Summarized by** button to select the bin size for collecting time from the database. The Bin options are Day, Week, Month, Quarter, Half (Year), and Year.

Specifications

The Report **Specifications** table allows you to type in everything from the Report Display screen (where it is accessed and displayed on the buttons) and save it as a Report name. By entering the name of the Report under Title, and entering a Heading name, Group name, Binsize (Summarized by), From and To date (of the Report Period) and Filter Set, you can store exactly the same report as if you had entered the information from the Display screen and saved the Report name as the Title. However, you can also specify and save a View name, which has to be selected from the View menu when the Report Display is used.

The same global nomenclature rules used with filters and views also apply to report names. When reports are first created in a **local** dataset, the **underscores *should not*** be entered with the report name. Report names that are preceded by an underscore in local mode are ignored when Resources updates information in the local preference file. This occurs so that the globally defined reports do not write back to the user's local preference file. Once the preference file is copied out to the server and used as a global preference file, the system will automatically add the underscores to identify global reports.

When a System Administrator wishes to add a global report while running in **client/server mode**, the **underscore *should*** be use at the beginning of the report name. This tells the system that it is a global report, and should be stored in the global preference file and should be made available to the general public.

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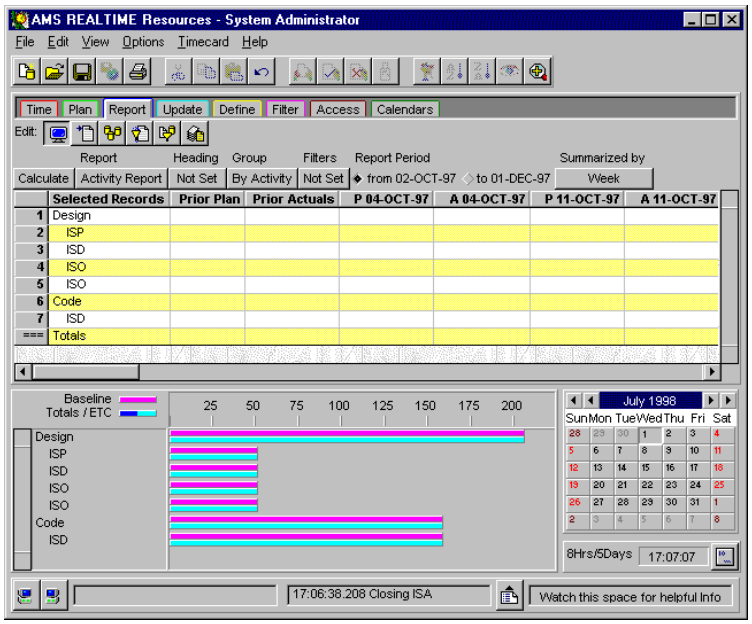

Creating A Monthly Report of Employee Hours by Activity

This combination of reporting criteria allows AMS REALTIME Resources data to be summarized and reported for extremely diverse applications. For example, one could produce a summary of overtime hours to date on a particular project, or determine the total hours reported for a given employee for the past month. A wide variety of information can be quickly and easily compiled with a few clicks of the mouse.

Complex reports can be also be generated by setting up user-defined datasets. These datasets can contain any combination of Reference fields (fields from different datasets) and Virtual fields (combinations and/or subsets of other data fields). Once a standard dataset is been created, user-selected fields can be positioned and sized on the screen to create the required report. This can then be saved as a View name, and later selected by name from the Format menu. Views that are selected will automatically reset the screen to the correct format, which can then be printed. There is no limit to the number of views which can be stored in the dataset.

Batch List

The **Batch List** table allows you to name a series of reports that have been previously defined in the Specifications table. Each name entered in the table will determine the reports that will be calculated and printed in series. Selecting Print Batch from the File menu will provide a popup list of the Batch List names from this table. Selecting one of the names from this list will cause that series of reports to be printed.

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Importing and Exporting

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Introduction

The Dump and Load options are located under the File menu. Dump and Load allows the user to export or import the fields from the current table to a text file. The user supplies the name of the text file through a standard File Open/Save dialog.

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Exporting Data

If the user is exporting data, all of the data from the current dataset is written to the file in the current column order. Only the columns that are currently displayed are written out to the file. The resultant file is tab delimited text with a heading line that provides the field names for each column of data.

Note: Dump and Load produce text files similar to the table for all datasets except the Time Entry Screen. Dumping from the Time screen creates a AMS REALTIME Projects transaction file, which has a specific format of Activity ID, Resource ID, Cost Center, Date, and Actual Hours. The filename(s) used for creating transaction files can be specified with each task record in the Filename field of the activity dataset, or a new filename can be specified.

Importing Data

If the user is loading from a text file, the data is read from the file into the table. The user is responsible for making sure that the selected table headings match the field names of the data, since the headings determine the data loading (not the data order).

Before loading data over existing data, *click* on the heading of the key field column which contains the unique record identifier. This field will be used as a unique key to determine that each text line updates the correct record. Record that don't match with an existing key record are appended to the dataset.

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Activity ID	Project	Phase	Description	KeyID	Start	End
EDU	NPT	EDU	Education	NPT-EDU-EDU	01-JAN-1993	31-DEC-1993
HOL	NPT	HOL	Holiday	NPT-HOL-HOL	01-JAN-1993	31-DEC-1993
ILL	NPT	ILL	Illness	NPT-ILL-ILL	01-JAN-1993	31-DEC-1993
MGT	NPT	MGT	Management	NPT-MGT-MGT	01-JAN-1993	31-DEC-1993
PDA	NPT	PDA	Paid Absence	NPT-PDA-PDA	01-JAN-1993	31-DEC-1993
QUA	NPT	QUA	Quality	NPT-QUA-QUA	01-JAN-1993	31-DEC-1993
UPA	NPT	UPA	Unpaid Absence	NPT-UPA-UPA	01-JAN-1993	31-DEC-1993
VAC	NPT	VAC	Vacation	NPT-VAC-VAC	01-JAN-1993	31-DEC-1993

A Sample Tab-Delimited Textfile Created from File Dump

Creating Transaction Files

To create transaction files of AMS REALTIME Resources actuals for AMS REALTIME Projects, first select the Time function. Then choose Dump from the File menu. The TaskID, ResID, Cost Center (Regular or Overtime), date, and actual hours for each record will be exported into the Filename specified in the activity dataset.

Note: Do not attempt to load dataset definitions over existing data. Dataset definitions must be loaded into an empty dataset.

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AMS REALTIME Interface Projects and Resources

Introduction

A direct interface between AMS REALTIME Resources and AMS REALTIME Projects is provided by your distributor. The interface is executed from within AMS REALTIME Projects, and can be used to create or update AMS REALTIME Resources datasets with planned activities, resource information and planned work. The interface can also load actual hours, calculated progress and slip dates back into AMS REALTIME Projects.

The AMS REALTIME Resources menu option will automatically appear on the AMS REALTIME Projects Schedule File Execute popup if the AMS REALTIME Resources interface software is present. A dialog allows complete selection of the desired options for data communication between the AMS REALTIME Projects project and the AMS REALTIME Resources database.

Since the AMS REALTIME Resources program allows employees to easily enter the hours worked against each task on a day-by-day basis, these actuals can be passed back to a project schedule as the actual hours spent on each task by each resource.

A Progress value for each activity can also be calculated from the actual hours worked and the expected hours to complete. AMS REALTIME Projects can use this information to calculate performance measurements and other cost variables. This information can also be exported to other accounting or scheduling systems. The AMS REALTIME Resources method of time collection produces extremely accurate schedule feedback.

There are several different options for exchanging data between AMS REALTIME Projects and the AMS REALTIME Resources database. These options are selected in the AMS REALTIME Resources options dialog, which is accessed from the File Execute AMS REALTIME Resources selection in AMS REALTIME Projects.

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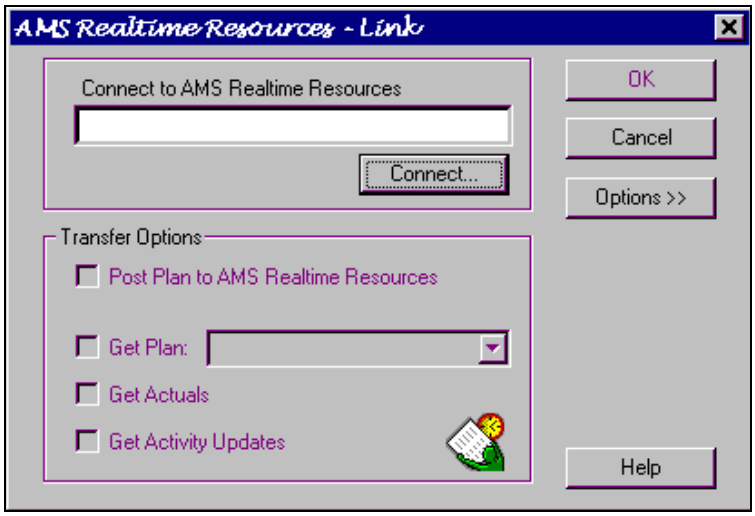
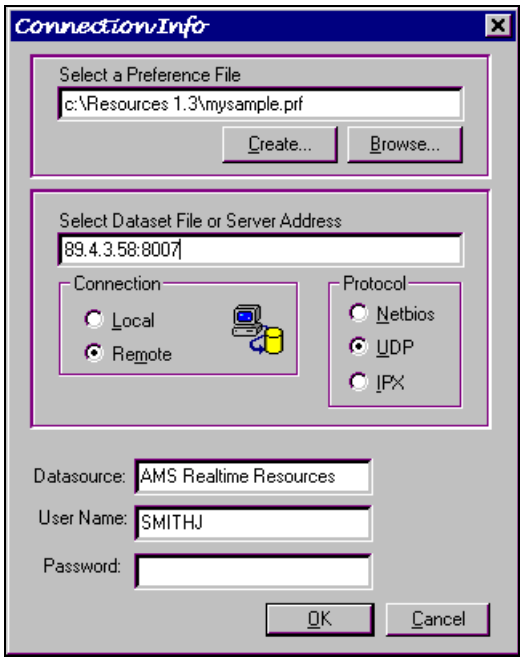


AMS REALTIME Resources Interface



AMS REALTIME Resources Connect Dialog

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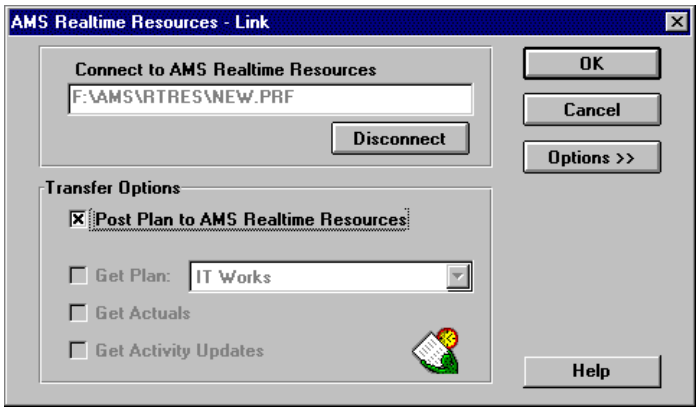

AMS REALTIME Resources Interface - Post Plan

Connecting to the Resources Database

The **Connect to** box in the upper left corner of the dialog shows the AMS REALTIME Resources database which is connected. If the box is empty, a dataset can be selected by *clicking* on the Browse button. A file selector dialog allows you to locate and choose the database. When the AMS REALTIME Resources database has been selected, it will appear in the **Connect to** box.

The **Protocol** box allows selection of the network protocol used to access the database. If you are running in standalone mode, select Local file. If you are connecting to a central AMS REALTIME Resources database on the server, select the network communication protocol used on your network: NetBIOS, IPX, or UDP (TCPIP).

Once these parameters have been set, *click* on the **Connect** button to establish a direct connection to the database. As soon as the connection has been established, the Connect button becomes Disconnect, which allows you to optionally sever the program link to the database.

When the data exchange has been completed, the dialog will disappear and the connection will be automatically severed. However, the next time the Execute AMS REALTIME Resources option is selected, the dataset will automatically connect to the previous dataset selection.

Sending the Project Plan to AMS REALTIME Resources

If the project planning has been done in AMS REALTIME Projects, this information can be automatically entered into the AMS REALTIME Resources database.

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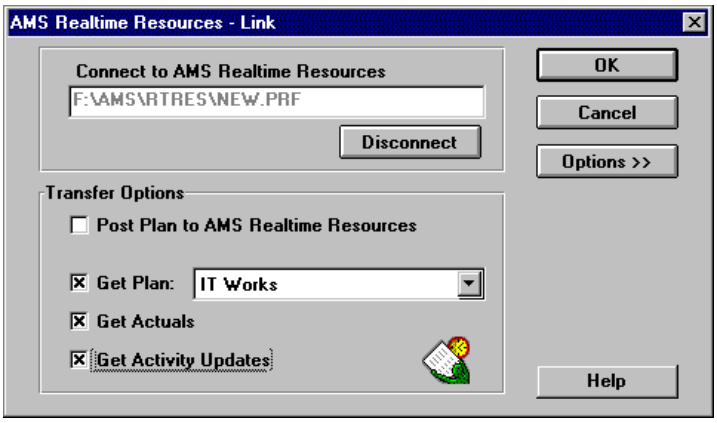

AMS REALTIME Resources to Projects

Operations

Once the database connection has been established, the **Operation section** of the dialog will be activated. To select the operation to send the current project plan to AMS REALTIME Resources (which includes Activities, Resources and Requirements from the AMS REALTIME Projects project), *click* in the box to the left of **Post Plan to AMS REALTIME Resources**.

By default, activities are identified by an exact match of the Activity ID in AMS REALTIME Projects and the Task ID in AMS REALTIME Resources (or the Activity field which has the Task ID attribute). If another AMS REALTIME Projects field will be used to keep an activity unique across all projects in the AMS REALTIME Resources database, that field can be specified in the **Activity ID** box. The field string **%actid** is the default, but it can be edited to another fieldname, such as %WBSID. The preceding percent sign is used by AMS REALTIME Projects to identify the string as a field name rather than a string.

The Resource is identified by an exact match of the ResID in AMS REALTIME Projects and the ResID in AMS REALTIME Resources (or the Employee field which has the ResID attribute).

The ScheduleKey from the AMS REALTIME Projects Schedule Extensions will be automatically copied into the Filename field in the Activity dataset (the field with the TaskFile attribute). This identifies the project schedule to which the task belongs, since the AMS REALTIME Resources database holds a composite of all activities across all projects.

Options

The **Resource section** of the dialog allows the user to determine what should be done with Resources which are in the schedule, but not in the AMS REALTIME Resources database. Only one of these options may be selected. If **Prompt** is chosen, the user will be prompted at each new resource to either Add or Skip over the resource. If **Add All** is selected, every new resource that is

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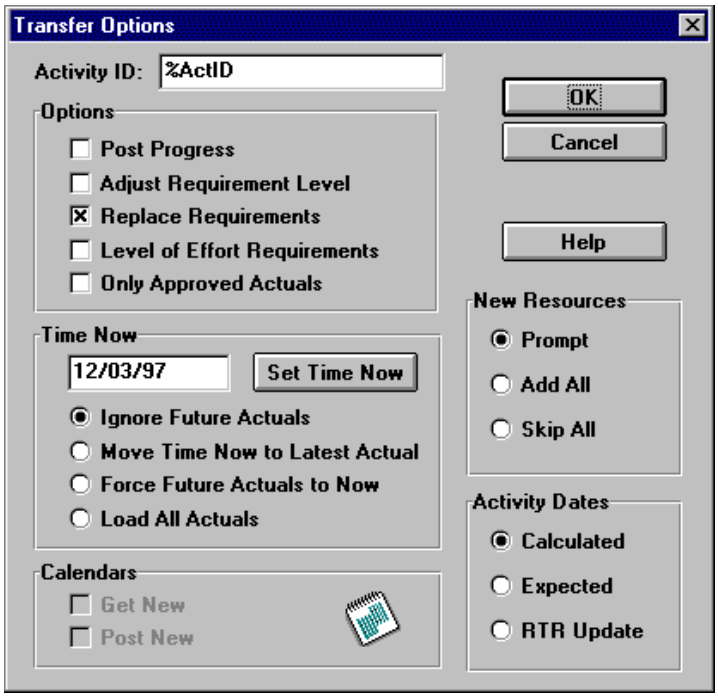
encountered will be added to the AMS REALTIME Resources dataset. If **Skip All** is selected, all resources not located in the AMS REALTIME Resources dataset will be bypassed.



Interface Options

Posting the Plan

After the appropriate options have been selected, *click* on **OK** to send the current project schedule plan to the AMS REALTIME Resources database. When a plan has been posted to AMS REALTIME Resources, a revision is automatically created in the project schedule called **Posted to RTR**. *Click* on the Multiple Revision icon and select the revision name to display the Posted to RTR revision. This helps to identify changes to the project plan that may need to be updated in AMS REALTIME Resources.

Getting the Project Plan from AMS REALTIME Resources

If the project planning has been done in AMS REALTIME Resources, or has been revised by a Resource Manager, this information can be automatically sent into a AMS REALTIME Projects schedule.

If a database connection has not been established, follow the procedure established in the section entitled **Connecting to the AMS REALTIME Resources Database**.

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Operations

Click on the box to the left of **Get Plan [ScheduleKey] from AMS REALTIME Resources** in the Operation section of the dialog. The contents of the ScheduleKey in the AMS REALTIME Projects Schedule Extension Labels must match with the contents of the AMS REALTIME Resources Filename field, (or the field that has the TaskFile attribute). The contents of this field in the AMS REALTIME Resources dataset determine the AMS REALTIME Projects schedule to which the activity belongs. *Clicking* on the arrow to the right of this box will provide a picklist of all the different Filename contents in the Activity dataset. Selecting a ScheduleKey match from the list is the method used to select the data you will load into the schedule.

Options for Data Exchange

The **Options section** of the dialog controls several aspects of Plan and Actuals communications between the two systems. Multiple options can be concurrently selected.

Post Progress will bring calculated Progress from the AMS REALTIME Resources dataset into the schedule. A Progress field can be defined as the percentage of the actual hours completed compared to the estimated hours to complete. A calculated Progress field and other related field definitions are provided in the Sample dataset (sample.dst) that is distributed with AMS REALTIME Resources.

If **Adjust Requirement Level** is selected, AMS REALTIME Resources will modify existing Level type requirements in the project schedule. The resource increment will be used to spread out the new requirement between the planned start and planned complete dates.

If **Replace Requirements** is selected, the current project requirements in the schedule will be completely replaced with the current AMS REALTIME Resources plan.

If **Level of Effort** is selected, new plan requirements from AMS REALTIME Resources will become Level type requirements in AMS REALTIME Projects. Existing Effort-driven requirements will be updated with the Planned Level-of-Effort, as well as Actual and Total Hours. This allows the remaining work to recalculate the duration of the activities in AMS REALTIME Projects.

Activity Date Options

The **Activity Dates section** of the dialog controls how activity start and complete dates are stored in the project schedule when the dates differ. Only one option can be selected.

If **Calculated** is selected, the planned start and complete dates from AMS REALTIME Resources are used to update the activity start and complete dates. Before the operation, a baseline revision called

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PreRTRUpdates is automatically created with the previous dates from the project schedule. This allows tasks that have been shifted by a resource manager to be easily identified by a project manager.

Of course, the project schedule can always be modified to meet the original schedule targets. Some method of communication and resolution of these differences within the project management structure must occur to achieve a workable plan.

If **Expected** is selected, the planned start and complete dates from AMS REALTIME Resources are sent to the project schedule in the form of expected start and complete dates. These dates will show up as "slipped" with the diamond indicator. (Check the Page Layout dialog in AMS REALTIME Projects to determine if the diamond marker is set to indicate the original Target dates or the expected Actual dates.)

The expected dates (and the revised durations) will be used in any network calculations. If network constraints are used in the schedule, it may be beneficial to turn the Network off before loading the revised plan. This will allow easier identification of task slippage from AMS REALTIME Resources plan changes before the network is allowed to recalculate and compound the issue.

Before the operation, a baseline revision called **PreRTRUpdates** is automatically created with the previous dates from the project schedule. This allows tasks that have been rescheduled by a resource manager to be easily identified by a project manager.

If the **RTRUpdate** option is selected, the plan from AMS REALTIME Resources will be loaded directly into a baseline revision called **RTRUpdates**. This allows tasks that have been rescheduled in AMS REALTIME Resources to be selectively updated in AMS REALTIME Projects.

Select RTRUpdates from the Multiple Revision icon to make it the current baseline revision. Tasks that have been rescheduled can be identified with the AMS REALTIME Projects match criteria of Start <> %BStart OR Complete <> %BComp. This can be stored in a View for instant recall. Refer to the *AMS REALTIME Projects User Guide Addendum* for complete documentation.

Select just those activities that will be updated and choose **Baseline -> Planned** from the Activity menu to copy the AMS REALTIME Resources revision dates into the current plan for the selected tasks.

Getting the Plan

After the appropriate options have been selected, *click* on **OK** to load the current AMS REALTIME Resources plan into the project schedule.

Getting Actuals from AMS REALTIME Resources

When actual resource hours are loaded into the project schedule from the lowest, most accurate levels, ACWP and other project cost

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variables can be instantly calculated with no delay time. This allows potential project slips to be identified in their early stages, while there is still time to correct problems before they become major impacts.

Options for Data Exchange

The **Options section** of the dialog controls several aspects of Actuals communications between the two systems. Multiple options can be concurrently selected.

Post Progress will bring calculated Progress from the AMS REALTIME Resources dataset into the schedule. A Progress field can be defined as the percentage of the actual hours completed compared to the estimated hours to complete. A calculated Progress field and other related field definitions are provided in the Sample dataset (sample.dst) that is distributed with AMS REALTIME Resources.

The option to get **Only Approved Actuals** will cause the Status field of the Actual timesheet record to be checked before actual hours are loaded into the project schedule. Only Approved hours will be loaded, and their Status field will be updated to Posted after the transaction is complete.

Options for Time Now

The options in the Time Now section of the dialog determine how actuals are handled if they are ahead of the current costbin defined by Time Now. Only one option can be selected.

The first option displays the project schedule Time Now in the box. If the **Set Time Now** button is chosen, you can edit the Time Now date, which will set Time Now in the project schedule.

If **Ignore Future Actuals** is selected, any actuals that have been posted ahead of the Time Now date will be ignored. They will not be loaded into the schedule, nor will they be marked as Posted.

If **Move Time Now to Latest Actual** is selected, the Time Now date in the project schedule will be automatically updated to the latest actual date encountered in the schedule. If Earned Value methods are being used to track schedule and cost variances in the schedule, this is not recommended.

If **Force Future Actuals to Now** is set, future actuals will be forced into the current costbin regardless of their actual date. Again, if Earned Value methods are being used to track schedule and cost variances in the schedule, this is not recommended.

If **Load all Actuals** is selected, all the actuals are loaded and statused as Posted. This will allow future actuals to be loaded, but they will calculate into their correct bins. This method may temporarily produce misleading cost variances until the earned value amounts catch up with the actual costs.

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Loading Actuals

After the appropriate options have been selected, *click* on **OK** to load the current AMS REALTIME Resources actuals into the project schedule. If desired, the current plan and actuals can be loaded concurrently by selecting both Operations.

This process should be initiated from each schedule at the end of each costbin period. The actual hours will then feed the cost calculations for earned value analysis.

Get Activity Updates from AMS REALTIME Resources

Any basic activity information, including any extension fieldnames that match, can be brought back into AMS REALTIME Projects from the AMS REALTIME Resources database. This method can be used when the Activity information should be updated, but not the associated Plan.

Select **Get Activity Updates from AMS REALTIME Resources** from the Operation section of the dialog, and *click* on **OK.** Any activity fields linked by Attribute keys or field names that match AMS REALTIME Projects Activity field names (including extensions) will be loaded from AMS REALTIME Resources into the project schedule.

Identifying Project Ownership of Tasks

Each AMS REALTIME Projects schedule that has activities in the AMS REALTIME Resources dataset should have a schedule extension label called ScheduleKey. The value of ScheduleKey should be the same value as is contained in the field with the filename attribute in the Activity dataset. For example, if a schedule has a ScheduleKey of **RX144**, all those actuals associated with activities that have a Filename of **RX144** will be loaded into that schedule. This allows activities from multiple schedules to be maintained in a single AMS REALTIME Resources database.

Timecard Transaction Dumps

An alternate method of exporting actuals to AMS REALTIME Projects (or another system) is to produce a text file containing activity, resource, cost center, date, and actual hours. At the end of each week (or time collection cycle), a File Dump from the Timecard screen will cause all collected hours for the current week to be output to the Filename specified in the activity dataset (identified by the TaskFile attribute). This output is stored in the

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AMS REALTIME Projects transaction file format, and consists of the following comma delimited ASCII text data:

Activity ID, Resource ID, Cost Center, Date, Hours

This hourly actuals data can be transacted into AMS REALTIME Projects through the Usage table. Resources in corresponding AMS REALTIME Projects files should have hourly units (since hours are collected by the AMS REALTIME Resources program) and weekly costbins to match the time collection cycle.

The Usage table transactions can be batch processed in AMS REALTIME Projects for multiple schedules that can be designated by a wildcard specifier (e.g., c:\spwin\xact*.sch). If the Batch Transaction process is used, each transaction file must have the same base name as the schedule, but use a ***.dat** extension. For example, the transaction file for **design2.sch** would be **design2.dat**. If **design2.dat** is set in the ScheduleKey before the tasks are loaded into the AMS REALTIME Resources database, then the Filename field will be automatically populated with this string.

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System Administration

Configuration and Setup

The configuration file is an ASCII text file which allows the user to set specific parameters. This text file is read on program startup, and controls some aspects of AMS REALTIME Resources functionality. This file should have the same base filename as the executable, but with an *.ini* or *.cfg* extension, depending on the platform. *Refer to Appendix A for a full listing of configuration switches for client and server applications.*

The configuration file provides the program with information that is user-definable, such as where the server database is located and what protocols are in use on the client networks. Switches are case insensitive.

Note: Specifications regarding the database server location and network protocol are stored in the preferences file, and do not need to be specified in the configuration file as well.

The **language** parameter holds the name of the resource file, which provides the program with menu list, dialog messages, and other resources. The string files can be translated and the program recompiled so that AMS REALTIME Resources can be converted into other languages as required. Different resource files would be included with different language versions.

The **smallfont, largefont** and **defaultfont** parameters allow specification of the fonts and font sizes which are used by the AMS REALTIME Resources program. The **fullscreen** parameter controls the default AMS REALTIME Resources window size.

The **planavail** parameter will produce the plan availability profile in Plan mode if the switch is set to Y; otherwise, only the employee schedule is displayed. If your database is extremely large, you may wish to turn this off to bypass the calculation of employee availability.

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The **drilldown** switch turns on the functionality that allows the System Administrator to setup an activity filter name for an Access level. The activity filter specifies the field order for popups so that users can select tasks to post time on unplanned work.

The **period** allows you to set the time collection period, which is used to calculate period totals on the timesheet screen. The period can currently be defined in DAY units only. The starting base date must be supplied. For example, **PERIOD = 14 DAY 03JAN95** is a valid configuration settings. One month is the default period. The **graceperiod** defines the number of days that a user can go back to make timesheet changes. Once the grace period has been exceeded, the modifications to actual hours must be made by a user who can access the Workplan directly. The grace period defaults to 365 day (no limit on the grace period), and always uses a unit of DAY.

If a period setting is not recognized as a standard period, it is assumed to be the name of an accounting period table. The accounting period table is a text type dataset which contains a period name, start date and end date for each collection period. This table should match up with the company accounting periods which are defined in the AMS REALTIME Projects costbins.arp file. The period dates must be maintained in order, and should be defined well beyond the current planning period.

The **dset** parameter specifies the location of the database file. The **settings** parameter specifies the name of the preferences file, which contains information about the last user that logged in, as well as filter and view information. If you are using a server version of the AMS REALTIME Resources, the **RTRServer** parameter will contain the node address of the server. The server dataset name defaults to TimeCard, but this can be modified by adding the parameter *dsetname=NewName.*

When running in client/server mode, the dataset name is comprised of the UDP service number (or port name) in combination with the host name. The parameter *TKServer* provides the address where the server dataset will be located, while the parameter *dset* provides the database filename.

When running in stand-alone mode, the parameter *dset* can provide the filename of the dataset. The *RTRServer* parameter must be either removed from the configuration file or commented out by placing a semicolon in the first column (e.g., **;**RTRServer="AMSHPSVR"). *Note: If the server can not find the dataset name as specified, the AMS REALTIME Resources program will produce an prompt and let you specify an existing dataset or create a new dataset.*

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A Sample Client Configuration File

[RTR]	Description
language=rtrrz.usa	Resource filename
smallfont=arial,6	Small fontname and size
largefont=arial,10	Large fontname and size (used in popups)
defaultfont=arial,8	Default fontname and size
settings=local.prf	Local preferences filename
helpfile=rtrhelp.hlp"	AMS REALTIME Resources help file
protocol=UDP	TCP/IP network protocol
udpmaxpacket=2048	Maximum size of UDP packets
drilldown=y	Use drilldown popup order for unplanned work
minpassword=6	Enforce at least 6 character passwords.
fullscreen=y	Default to full screen window
planavail=y	Use resource availability profile in Plan screen

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A Sample Server Configuration File

[RTRServer]	Description
language=rtrsrz.usa	Resource filename
clienttimeout=200	Ticks (200/18 sec) to wait for initial server response
clientshortto=5	Ticks to wait for further communication packets
smallfont=arial,6	Small fontname and size
largefont=arial,10	Large fontname and size (used in popups)
defaultfont=arial,8	Default fontname and size
dset="fy98.dst"	Server dataset filename
settings="fy98glbl.prf"	Global preferences filename
RTRServer="time@boris"	Network address of server
protocols=UDP	TCP/IP protocol in use
udpmaxpacket=2048	Maximum size of UDP packets
tnxlog=N	Don’t keep a transaction log
period=14 DAY 03JAN95	Time collection period and base date
graceperiod=5 DAY	Days that timecard can be adjusted after period end

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Command Line Specifications

If AMS REALTIME Resources is executed at the command line, the executable name (rtr16.exe or rtr32.exe) can be followed by a path and preferences file that will override a specified dataset in the configuration file. The directory specified in the dataset path is searched for a configuration file. This option can be used by someone who may wish to access another dataset and preferences file in a separate directory without modifying the configuration file.

For example, if

c:\time\rtr32.exe c:\west\contrct.prf

is entered at the Windows 3.1 File Run command line, AMS REALTIME Resources will look for another configuration file in the **c:\west** directory and open the **contrct** preferences and its associated dataset.

Login IDs

The configuration parameter *ResLogin* provides the name of the field in the employee dataset that holds the Login ID for each employee. The fieldname provided (i.e., *ResLogin = LoginIDFieldName*) must exactly match the name of the field. AMS REALTIME Resources determines which employee is accessing the database by matching the Login ID with the corresponding employee information contained in the employee dataset. If the configuration parameter **CaseSensitive** = Y, then logins are case sensitive. By default, all Login IDs are forced to upper case and matched accordingly. All Login IDs must be unique.

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Passwords

If a fieldname called Password is contains data in the employee dataset, AMS REALTIME Resources will prompt the user for their password before allowing them into the system. The length of the password is definable by the System Administrator.

Passwords should be chosen by the user so they can be easily remembered, but should never be divulged to another user. The Options menu contains a selection that allows a user to change their password. The user must enter their old password, the new password, and then verify the password by reentering it correctly.

If a password is forgotten, it can be reset by the System Administrator. AMS REALTIME Resources should be configured so that everyday users can not view or modify passwords or access levels. Only System Administrators should be entrusted with this level of information to protect the integrity of the database.

Access Security Controls

Access Codes

The **Access** table defines each access level, which determines which AMS REALTIME Resources functions are accessible to each user. It is recommended that only the System Administrator have update access to the Access table, and that most users not be allowed to view this table.

When a database is first created and no Access levels have been defined, a message will appear stating that access is completely unrestricted for all users. As soon as Access levels have been defined and assigned to user Logins, the database should be saved and restarted to enable user-defined access controls.

The sample dataset defines four levels: system administrator, manager, default, and blank. These levels and level names are not mandatory, but can be used as a starting point to provide access levels for different types of users. However, it is recommended that a blank level with no access be stored in the first access level (row 1). If a match is found between a user's defined Access level and a level in the Access table, the user is granted the access levels defined for the specified level. If no match is located, the access level granted will be that of the first level. If you prefer not to maintain a blank level, make sure that all Users have a defined Access level.

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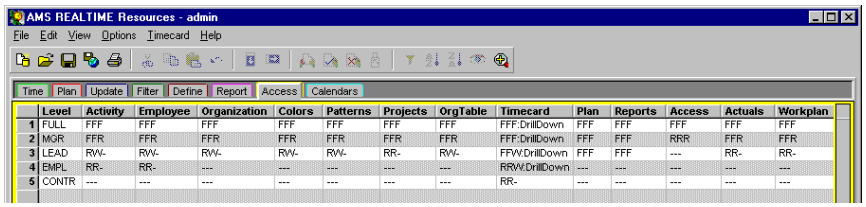
AMS REALTIME Resources - admin
File Edit View Options Timecard Help
Time Plan Update Filter Define Report Access Calendars

	Level	Activity	Employee	Organization	Colors	Patterns	Projects	OrgTable	Timecard	Plan	Reports	Access	Actuals	Workplan
1	FULL	FFF	FFF	FFF	FFF	FFF	FFF	FFF	FFF:DrillDown	FFF	FFF	FFF	FFF	FFF
2	MGR	FFR	FFR	FFR	FFR	FFR	FFR	FFR	FFF:DrillDown	FFF	FFF	RRR	FFR	FFR
3	LEAD	RW-	RW-	RW-	RW-	RW-	RR-	RW-	FFW:DrillDown	FFF	FFF	---	RR-	RR-
4	EMPL	RR-	RR-	---	---	---	---	---	RRW:DrillDown	---	---	---	---	---
5	CONTR	---	---	---	---	---	---	---	RR-	---	---	---	---	---

A Sample Access Table

The Access table is comprised of a basic three-letter code for each dataset and function. For dataset access codes, the first letter determines the level of change allowed to dataset filters. The second letter determines what the user can change in the contents of each dataset. The third letter determines the level of change allowed to dataset definitions.

Filter and View names can be applied to an access code to allow limited access to a dataset, such as allowing the user to look at only his own personal employee information or to limit the fields that can be viewed.

The Access dataset provides four basic character codes that are used in each access code:

-	No View or Update
R	Read Only
W	Read and Write
F	Full (Read, Write, Define, Insert, Delete)

To define a security access level, enter a Level name. AMS REALTIME Resources will compare the contents of the field called Access Level, which is stored in the employee dataset, with the Levels in the Access table. Three access codes are defined for each dataset and mode which determine the access to Filters, Update Mode, and Definitions.

The Timecard access codes have different meanings, since they apply to a complex timecard rather than a data table. In the first position of the Timecard access code, the F character provides Insert and delete capability for Timecard records. This can be given to Manager type access levels. The W character provides Update capability of the planned hours (the Base field). Setting the first code to R lets users view their Base hours, but not edit them directly. The ETC field can be updated for all Access levels. The R character is generally used in position one for most employees who only need to enter their own time.

The second position of the Timecard access code can be set to the **F** character to allow users with this access level to Approve and Reject timecard records that have been submitted for the approval process.

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Any other access code will allow Submit and Close functionality (closing applies to the user's part of the workplan only).

The third position of the Timecard access code can be set to the **F** character to enable Load and Dump options from the Time screen, which will dump out all the actuals data. Using an Access code of W does not allow Load and Dump access, but will enable the New Activity button in the Timecard mode. The dash (**-**) character in this position disables the New Activity button for users with this access level.

Access Hierarchy

The order in which Access Levels are created is important. For example, an Access level defined on row number 1 of the Access table is higher in the hierarchy than the access level defined on row 2. This means that when you are assigning these access rights to individuals in the Employee table, you will notice that some of the Access Levels may be grayed out in the list. This is telling you that these items are of a higher access level than that to which you are currently logged in. For example; If the system administrator is defined on row 1, and a Manager is defined on row two, when the manager is logged in he will not be able to assign system administrator rights to any one in the database as this will be grayed out in the list.

Also, if you define items with the first three characters the same, Resources will treat these as having equal status in terms of Access Hierarchy. For Example MNG1, MNG2 and MNG3 will be considered equal by resources, regardless of their positions relative to each other in the Access table rows.

Example:

1	SYSADM	Highest level access
2	MNG1	Second level access
3	MNG2	Second level access
4	MNG3	Second level access
5	EMP1	Third level access

So, using the above example; SYSADM can see and assign access rights in the employee table to everyone. MNG1 - MNG3 can assign access rights of each other and EMP1s but not SYSADMs, EMP1 can not see or assign SYSADMs or MNGs but can see and assign other EMPs.

Attaching a Filter or View to an Access Code

An enforced filter for each dataset can be specified by putting a colon followed by the user-defined filter name after the three letter access code (e.g., RR- : *filtername*).

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Filter names are applied to an access code by adding *:filtername* to the three-letter code. This allows limited access to a dataset, such as allowing the user to look at only his own personal employee information (by using a User Login filter), or activities which are assigned to a specific project or type.

An user-defined View can also be enforced by putting a vertical bar after the access code, colon and filter name (if used) followed by the view name (e.g., RR- : *filtername* | *viewname*). If a filter name is not used, the colon must still be present, but the filter name is omitted (e.g., RR- : | *viewname*)..

If a view will be used to restrict access to certain data fields, make sure that Lock Layout is checked on before saving the view, or the user will still be able to add those fields to the table from the popup.

Creating a User Login Filter

When a user logs into AMS REALTIME Resources, the employee dataset is searched for an exact match between the Login ID and Password which are entered. When it finds a match, it keeps a pointer to the current user, which is how the software knows who is logged on and what the current Access Level should be.

Any of the employee information fields for the current user can be referenced through the **^User** subset (case sensitive!). For example, to create a match filter where only the currently logged in user's employee data will show, select Filter and the Employee dataset. Next to the New line, enter the filter name **User Only**. On the same line under the Login column, type the following match criteria:

= ^User.Login

If the User Only filter name is added to the default user Access Level for the Employee dataset, whenever an employee logs in, they will be able to view their own Employee information, but not that of anyone else. Any of the employee fields can be used in combination with the **^User** subset.

To add this filter to the Access table, enter the following access code to the Employee column:

-R-:User Only

This will allow each individual user to view only their own Employee information, but not examine any of the filter criteria or data definitions.

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Network Environment

Network Options

The AMS REALTIME Resources program runs under Windows, X-Windows (Motif), and Macintosh environments. Three network protocols are recognized: IPX, NetBIOS and TCPIP. NetBIOS is the default protocol, and requires no external .DLL files. UDP (TCPIP) requires the Windows Socket Library (*winsock.dll*), and IPX requires Novell's client API (*nwipxspx.dll*) to be present. UNIX versions of AMS REALTIME Resources only recognize UDP.

AMS REALTIME Resources uses standard network communication protocols. The network must be up and running, and the AMS REALTIME Resources Server program should also be executing before clients attempt to execute and send transactions to the server. The server displays a status table for each protocol it is using.

Clients on multiple networks, even those that run under different protocols, can simultaneously access the server application and database.

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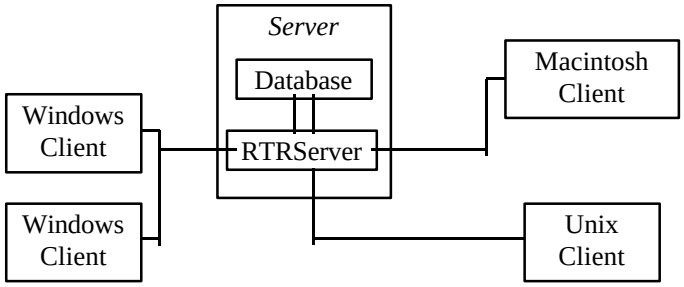

Network Configuration Parameters

Each configuration file provides information regarding system configuration, communication protocols and the location of the database. While the server application can communicate with several different client protocols simultaneously, it will still use one native protocol.

In the client configuration file, the *protocol* configuration switch specifies the local network protocol. In the server configuration file, the switch *protocols* specifies all network protocols which will be used by the client applications.

When running a client application in client/server mode, the pointer to the server dataset is comprised of the UDP service number, or port name, in combination with the host name. The parameter *RTRServer* provides this address. For example, if a client application will be accessing the server on the HP9000, and a service port of 8000 has been defined for that machine, the RTRServer parameter might be set to

RTRServer = 8007@HP9000

or

RTRServer = 89.4.3.58:8007

where 8000 is the port number and HP9000 is the name of the host computer (at 89.4.3.58, in the second example). The port number can also be referenced as a symbolic name which has been defined in the services file. The host name can be declared as the IP address, a domain name server or a symbolic name which has been defined in the hosts file.

The configuration switch **UDPMaxpacket** specifies the datagram size in bytes. This number refers to the largest size that the network can send without fragmenting the data packet. The default is 8192, which is used if the switch is not present. Some Windows TCP protocols can't handle a value this large, which is indicated by the no server response after four attempts when trying to initiate a login from a client application. If this occurs, set the UDPMaxpacket setting to another number, such as 512, in both the client and server configuration file. The *UDPMaxpacket* number **must be identical** in both the client and server settings. If you are using serial line communications (SLIP), it is recommended that both UDPMaxpacket parameters are set to 256.

Local or Remote Database Access

When running a database locally, also referred to as in stand-alone mode, the parameter *dset* provides the local filename of the dataset, and *TKServer* must be

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either removed from the configuration file or commented out by placing a semicolon in column one.

A settings, or preferences file, can be specified with the configuration switch *Settings* followed by the settings filename (e.g., **settings = myviews.prf**). If no dataset or settings file is specified, the program will provide a prompt so you can specify Local or Remote access.

If you select Local access, the program will prompt you for the dataset name. If you select Remote access, you will be prompted for the RTRServer address. If multiple protocols are available for the platform you are using, you will also be prompted for your communications protocol.

If you create an icon for your AMS REALTIME Resources client application and pass in the preferences file as a command line parameter, the dataset will be loaded automatically without specifying the **dset** parameter in your configuration. This allows you to maintain multiple configurations on the same system.

Client/Server Status Bar

Because it is often useful to know what's happening between a Client and its Server the application includes a status bar at the bottom of the program window. This status bar gives information about transactions as they occur between the Client and the Server and also stores a log of each event. The first component on this status bar are two small status icons.

These icons give a graphical representation of a transmission, process receive or idol state. The status icon on the left represents the Client. The one on the right represents the Server. For each button the status is as follows:

Two Green Lights, Blue screen = Idol

Right Light is Red = Transmitting

Left Light is Red = Receiving

Two Green Lights, white screen = Processing.

Clicking on the Client Status Icon will give you a brief summation of all the types of transactions that have happened since the program was logged on.

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Event Log

Click the Event Log button to see a list of the last 100 events that have occurred on the client program. Each entry has a time stamp and a description of the event. This log should be used by System Administrators to monitor performance and to trouble shoot if problems occur with the network.

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Configuration

Configuration Switches

This Appendix provides a listing of AMS REALTIME Resources configuration switches. Client configuration switches are stored in **rtr16.ini** if your are running 16 bit software, **rtr32.ini** if you are running 32 bit software or rtr.cfg for Unix and Macintosh environments. In all cases, the base name of the file matches the base name of the executable. Server switches are stored in the **rtrs16** or **rtrs32 .ini** or **.cfg file**, following the same naming conventions as the client configurations. These switches are indicated by the word **Server** after the switch and default setting.

The information is provided in the following format:

Switch=*Default* **Client / Server**

Description

AMS REALTIME Resources Switches

ALLOWLOGIN=*LoginID List* Server

Only the specified list of User Login IDs can Login to AMS REALTIME Resources. This can be set for maintenance, testing or downloading of actuals.

ENDSESSION=Y Server (NT only)

When running as a Service (NT only) Allow the server to remain running when the user logs off. Set this to Y if you wish the server to shut odwn when the user logs off.PRINTMARGIN=*inches* Client

Specify printer margin in inches.

GETPLANLISTOPTION=1 Plan View

0 - List will display only My Activities. That is to say, a manager will see the activities he and his team are planned on, based on the Organization codes.

1 - Uses the Activity filter.

2 - This option means 0 & 1 are the factors for the list content, i.e. activities must be in both lists.
NOTE: This options should only be set if all the Planning data is created from Projects or another outside source.

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3 - This option means 0 or 1 are the factors for the list content, i.e. activities must be in either list.

REPORT=*filename* Client / Server

Generate memory usage report to file on About selection.

PLANHIDEOT=Y Client

Hide Overtime fields in Plan mode.

PLANAVAIL=N Client

Show resource availability in Plan mode.

NETWORKTEST=N Client

Allow access to Network test from Options menu.

TARGETCOMPLETENOLATERTHAN=Y Client

SETTINGS=file.prf Client

Specify the default preference file.

TIMECARDPLANTIMES=Y Client

Set this switch to Y (default) to display times with dates on the planning info. To display dates only set this switch to N, time is still calculated and stored.

PERIOD=*n DAY date* Client / Server

Set the time collection period. N is the number of days in each period, and the date specified is the starting date of the first period. The default is one month. For example,

PERIOD=14 DAY 02JAN95

sets a collection period of two weeks starting at January 2. Any string not recognized as a standard period is assumed to be the name of a user-defined Cost Periods dataset. The dataset must sequentially hold the Period Name, Period Start Date, and Period Complete Date.

GRACEPERIOD=365 Client / Server

Set the grace period to post actuals. The grace period is the number of days that users can still post actuals after the collection period ends before they are locked out.

DRILLDOWN=N Client

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Allow Drilldown access to non-planned work.

DSET=file.dst Client / Server

Specify the database name.

LOGLEVEL=5 Server

Set the Server display level. Level 1 (Fatal) - Level 6 (All), as defined in the Server menu.

IDLESAVE=*n* Server

Save after *n* minutes of idle time.

FORCESAVE=*n* Server

Save after *n* minutes always.

RTRSERVER= Client / Server

Specify RTRServer address.

TXNLOG=N Server

Log all transactions to a transaction log file.

BKUPDEPTH=5 Client / Server

Specify number of database backups (**.D0n*).

PROTOCOL= Client

Specify client network protocol.

PROTOCOLS= Server

Specify a list of all server protocols used.

CASESENSITIVELOGIN=N Client

This determines if LoginIDs are case sensitive.

MINPASSWORD=0 Client

Minimum number of characters in a password.

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TABLEBUFSIZE=15000 Client

Number of bytes allocated for table buffer size.

Environment Switches

The following switches are identical to the AMS REALTIME Projects switches defined in Configs.Doc. If you are a AMS REALTIME Projects user, you may wish to check how these switches are set in the AMS REALTIME Projects configuration file to maintain consistency.

3DTABLES=Y Client / Server

This provides 3D effect in the table face.

ICONFILE=RTR.ICL Client

This setting tells Resources which ICL file to use for regular 16X16 toolbar icons.

LARGEICONFILE=RTR24.ICL Client

This setting tells Resources which ICL file to use for large 24X24 toolbar buttons. You can customize the appearance of the toolbar buttons by editing these .ICL files using tools such as Microangelo© or similar Icon editors. You must however be careful not to rename or re-arrange any of the icons in the ICL file. Also, make a backup of the .ICL file before you make any changes.

USELARGEICONS= Client

The default for this switch is determined by the size of your screen resolution. If the screen's resolution is less than or equal to 1024 X 768, then the default is automatically set to N, and smaller toolbar buttons will be displayed. A screen size of greater than 1024 X 768 will automatically set this switch to Y, giving larger toolbar buttons. To over-ride the default setting, add this switch to the RTRnn.INI (or RTR.CFG file for Mac and Unix) and enter Y or N depending on what you require.

INTLMONEYSIGN=$ Client / Server

This is the character used as the monetary symbol for international applications.

INTLMONEYRIGHT=N Client / Server

This determines the placement of the monetary symbol for international applications.

INTLDECIMAL = **.** Client / Server

This is the character used as the decimal point for international applications.

INTLTHOUSAND = **,** Client / Server

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This is the character used as the thousands separator for international applications.

INTLDATESEP = **-** Client / Server

This is the character used as the date separator character for international applications. For example, the slash (/) is used in the date format 08/08/96.

INTLLISTSEP = **,** Client / Server

This is the character used as the list item delimiter for international applications.

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INTLNEGPAREN=N Client / Server

This determines if parenthesis are used to display negative numbers.

INTLALTDATE=N Client / Server

This determines the date ordering of Month, Day and Year. If this is Y, DD/MM is used instead of MM/DD in the date format. If this is A, the Asian date format YY/MM/DD is used.

GRAYS=33,25,17,34,26,18,10 Client / Server

Patterns used by plotters for "gray scale" patterns. If you have problems with the default, try 31,30,15,14,13,12,11.

SMALLFONT=*font,size* Client / Server

Font and size of Small font.

LARGEFONT=*font,size* Client / Server

Font and size of Large font.

DEFAULTFONT=*font,size* Client / Server

Font and size of Default font.

PRINTERFONT=Arial,8 Client

The default font used for printing dataset tables, timecards, etc. This does not apply to Report specifications where a font is specified.

TABLEDUMPTHOUSEP=**,** Client / Server

Thousands separator character for numbers.

DATEFMT=01-JAN-96 ————Client / Server

Date format sample.

BUSYWHEEL=Y Client / Server

This switch displays a spinning “wait” cursor when the program is busy.

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LANGUAGE=RTRRZ16.USA Client / Server

For Windows 3.1x

LANGUAGE=RTRRZ32.USA Client / Server

For Windows 95/NT and 32 bit versions

This switch specifies a resource file, which is different for translated language versions.

RIGHTDOUBLE=Y Client / Server

The Windows right mouse button equals a *double-click* with the left mouse button.

WINALTFILLRECT=N Client / Server

Setting this to Y will force use of the alternate Windows FillRect function for printers that don't fill in the background pattern in rectangles.

WINALTWIDELINE=N Client / Server

Setting this to Y will change the way some Windows printer drivers print wide lines, so they print lengthwise rather than sideways, which is less efficient.

WINMAXHMINUS=0 Client / Server

Number of screen pixels to subtract from the fully maximized screen height. This makes the AMS REALTIME Resources window slightly shorter when maximized.

PRINTCOMMAND= UNIX Client

After a printer file is generated with the print command, provide an option to execute the specified command. The command must be enclosed in quotes. The %s is used for the print file name. For example, a command to queue a print job on the RS6000 is:

```
PRINTCOMMAND="qprt -c -PQNAME %s >qprt.lst &"
```

PRINTFILE=default.ps UNIX Client

Default output file name.

Communication Switches

The following switches are used to fine tune the network communications:

NBSENDBUFS=4 Client / Server

Number of **NetBIOS** send buffers. Maximum is 52.

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NBRECVBUFS=48 Client / Server

Number of **NetBIOS** receive buffers. Maximum is 52.

NBRECVPOST=2 Client / Server

Number of **NetBIOS** read ahead buffers.

IPXESRENABLES=Y Client / Server

Enable **IPX** to allow interrupts while posting a message to a window handle.

IPXSENDBUFS=32 Client / Server

Number of **IPX** send buffers. Maximum is 52.

IPXRECVBUFS=32 Client / Server

Number of **IPX** receive buffers. Maximum is 52.

CLIENTTIMEOUT=25 Client

Number of ticks (1 / 18th of a second) to wait the first packet response.

CLIENTSHORTTO=5 Client / Server

Number of ticks (1 / 18th of a second) to wait for subsequent packets.

CLIENTTICKLEMIN=1 Client

How often (in minutes) the client should tickle the server.

CLIENTMAXTRIES=15 Client

Number of communication retries before a message prompt appears.

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UDPMAXPACKET=8192 Client /Server

Maximum UDP packet size. The correct value depends on the TCP/IP stack size.

CLIENTPACKETGATE= n Client

Number of packets that can be sent out from the client before a response back from the server to eliminate buffer overflow. When using PC TCP, try setting this to 4.

SERVERPACKETGATE= n Server

Number of packets that can be sent out from the server before a response back from the client to eliminate buffer overflow. When using PC TCP, try setting this to 4.

SRVTIMEOUTMIN=15 Server

Number of minutes a server will wait until it logs a user off.

MAXSERVERS=3 Server

This can be set to the number of network protocols used to save memory. One server application is generated to handle each protocol used. Set this switch to the number of protocols used to use less memory. Maximum setting is 4.

SRVRELOGINOK=Y Server

Let the Server allow a user to login from the same node without logging off first.

AMS REALTIME Projects Switches

These switches can be added to the AMS REALTIME Projects configuration file to specify defaults for the direct interface between AMS REALTIME Projects and the AMS REALTIME Resources database.

RTRERRORLOG=*filename* RTP <-> RTR

When executing the interface between AMS REALTIME Projects and AMS REALTIME Resources, this file will contain any exception messages, such as missing resources or activities.

RTRRZADJUSTLEVEL=N RTP <-> RTR

If this switch is set to N, the requirement will be spread out over the duration of the activity. If this is set to Y, the requirement will be front loaded at the starting requirement date.

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RTRRZREPLACE=N RTP <-> RTR

If this is set to N, requirements from AMS REALTIME Resources will be added to existing project requirements. If this is set to Y, all project requirements will be replace by the current AMS REALTIME Resources requirements.

RTRRZAPPROVED=N RTP <-> RTR

If this is set to N, all actuals are loaded into AMS REALTIME Projects from AMS REALTIME Resources. If this is set to Y, only **Approved** actuals are loaded, and the status of those actuals will become **Posted**.

RTRRZLOE=N RTP <-> RTR

If this is set to N, new requirements that are loaded into AMS REALTIME Projects from AMS REALTIME Resources will be created as Level type requirements. If this is set to Y, new requirements will be created as Effort-driven types.

RTRSERVER=*server address* RTP <-> RTR

Address of the Server where the AMS REALTIME Resources dataset resides.

RTRDSET=*local dataset filename* RTP <-> RTR

Default filename of the local AMS REALTIME Resources dataset.

PROTOCOL=Netbios RTP <-> RTR

Network protocols currently supported are: **NetBIOS**, **IPX** and **UDP**. UDP is used for TCP/IP.

RTRCONNECT=*preference filename* RTP <-> RTR

RTRSERVER, RTRDSET and PROTOCOL can be replaced with this setting. The preference file contains all the required information for making a connection to the REALTIME Resources Server.

RTRACTID=%actid RTP <-> RTR

Use the Activity ID as the key field to identify tasks when passing data between AMS REALTIME Projects and AMS REALTIME Resources. Field names must be preceded with a percent sign.

IGNORECOMPLETED=N RTP <-> RTR

Set this switch to 'Y' to ingore 100% complete activities when bringing a plan into REALTIME Projects from the Resources database.

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DDE

DDE Service Topics

Service Application Name	**RTR**

Services	***Service Topics***	***Description***
Activity	FieldNames	Field Names in the Dataset
	FieldTypes	Field Data Types and Definitions
	Filter	Current Data Filter Name
	Formats	TEXT type
	Record	Current Record Number
	TopicItemList	List of Available Service Topics
Employee	FieldNames	Field Names in the Dataset
	FieldTypes	Field Data Types and Definitions
	Filter	Current Data Filter Name
	Formats	TEXT type
	Record	Current Record Number
	TopicItemList	List of Available Service Topics
Organization	FieldNames	Field Names in the Dataset
	FieldTypes	Field Data Types and Definitions
	Filter	Current Data Filter Name
	Formats	TEXT type
	Record	Current Record Number
	TopicItemList	List of Available Service Topics

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Services	*Service Topics*	*Description*
other user-defined datasets	FieldNames	Field Names in the Dataset
	FieldTypes	Field Data Types and Definitions
	Filter	Current Data Filter Name
	Formats	TEXT type
	Record	Current Record Number
	TopicItemList	List of Available Service Topics
Workplan	FieldNames	Field Names in the Dataset
	FieldTypes	Field Data Types and Definitions
	Filter	Current Data Filter Name
	Formats	TEXT type
	Record	Current Record Number
	TopicItemList	List of Available Service Topics
Actuals	FieldNames	Field Names in the Dataset
	FieldTypes	Field Data Types and Definitions
	Filter	Current Data Filter Name
	Formats	TEXT type
	Record	Current Record Number
	TopicItemList	List of Available Service Topics

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Services	*Service Topics*	*Description*
Report		
R - Read (DDERequest) **W - Write (DDEPoke)**		
	Start	String Representing the Report Start Date (R/W)
	Complete	String Representing the Report Complete Date (R/W)
	Binsize	Current Report Bin Size (W), Available Bin Sizes, Tab Separated (R)
	Groups	Desired Group Name (W), Available Group Names, Tab Separated (R)
	Filters	Desired Filter Set (W), Available Filter Sets, Tab Separated (R)
	Specification	Report Specification Name (W), Available Specifications, Tab Separated (R)
	Data	Report Data, Tabs Between Columns, CR Between Rows (R Only) [Valid After Calculate]
	Labels	Column Headings, Tab Separated (R Only) [Valid After Calculate]
	Rownames	Data For Column 0 Only, Tab Separated (R Only) [Valid After Calculate]
	[Calculate]	Command to Calculate Report. No Arguments; Populates Data, Labels and Rownames NOTE - Square brackets are not part of the command name, but are required to conform to DDE command syntax.

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The following is a sample Microsoft Word Basic Macro to get Report data from AMS REALTIME Resources:

```
Sub MAIN
        rc = DDEInitiate("RTR", "Report")
        DDEPoke rc, "Start", "1/1/96"
        DDEPoke rc, "Complete", "3/31/96"
        DDEPoke rc, "Groups", "Employee"
        DDEPoke rc, "Filters", "Engineering Dept"
        DDEExecute rc, "[Calculate]"
        l$ = DDERequest$(rc, "Labels")
        d$ = DDERequest$(rc, "Data")
        Insert l$
        Insert Chr$(13)
        Insert d$
        DDETerminate rc
End Sub
```


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ODBC

Open Database Connectivity (ODBC)

ODBC is a method used to link databases directly. ODBC must be supported by your platform in order to be used. Also, ODBC drivers for other databases or applications must have been installed and properly configured on your system in order for the process to function.

This process allows direct data access between the AMS REALTIME Resources datasets and other database programs. For example, an external database program that maintains all of the basic employee information might be linked to the AMS REALTIME Resources Employee dataset, so that information that is entered into the external database will be automatically loaded into the Employee dataset.

This data exchange can go both ways. For example, Actuals data that has been collected in AMS REALTIME Resources can be automatically linked to another database so that it can be used by another system. Reports that are generated in Resources can also be linked to another database program for historical storage or enhanced reporting.

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Installing the ODBC Drivers

Basic ODBC Drivers

If you already have ODBC installed on your system, an ODBC icon will found in the Windows Control Panel group. If this is not present, install the ODBC drivers from the Windows installation disks.

Place the AMS REALTIME Resources ODBC Installation disk in a floppy drive. Use the Windows File Run command to execute the **Setup** program from the floppy disk. The setup program will load the AMS REALTIME Resources ODBC drivers into your Windows System directory. (Note: choose the 16 bit or the 32 bit driver, depending on the application you are running.)

From Windows:

click on **File**

Run ...

Browse ...

Select the drive (or directory) AMS REALTIME Resources ODBC directory.

Select **Setup.exe**

click on **OK**

OK

The ODBC drivers installation program will execute.

click on **Continue**

Select **AMS REALTIME Resources**

click on **OK**

The driver will install the ODBC files into the Windows System directory.

Run the Windows **Control Panel** program and *double-click* on the **ODBC** icon to run the **ODBC** setup. If you *click* on the Drivers button, you should see **AMS REALTIME Resources** in the list as an installed ODBC driver. *Click* on Close to return to the ODBC Data Sources dialog.

Configuring the Data Sources

Once the AMS REALTIME Resources ODBC driver has been installed, the data sources which use this driver can be configured. The data sources are AMS REALTIME Resources preference files, which contain the Basic datasets and Reports that can be linked to other programs.

To configure a Data Source, *double-click* on the **ODBC** icon to run the **ODBC** setup. From the **Data Sources** dialog :

click on **Add ...**

Select **AMS REALTIME Resources**

click on **OK**

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From the **Setup** dialog, enter the following information for the Data Source :

Data Source	A descriptive name for the data source.
Preference File	The preference file name (full path and filename) *or* protocol and server name.
UserID	The UserID for login access rights.
Password	The Login Password for that UserID.

For both local and server databases, use the full path and file name of the local preference file which points to the AMS REALTIME Resources database. For example, the Preference File might be **c:\rtr\wb.prf** .

click on **OK**

Repeat this process for to add any additional Timekeeper data sources. When all Data Sources have been entered,

click on **Close**

and *click* on **OK**

This completes the AMS REALTIME Resources ODBC installation and setup procedure.

Making an ODBC Connection to Resources

Each program will have it's own instructions to make an attachment to an ODBC database. The following examples should give you the basic idea.

To create a Microsoft Access database that uses the AMS REALTIME Resources data, do the following:

Run Microsoft Access

click on **File**

New Database

OK

When the database is open:

click on **File**

Attach Table ...

<SQL Database>

OK

Select the AMS REALTIME Resources data source

click on **OK**

Select a dataset or report for an open connection

click on **OK**

Repeat the last two steps until all Resources datasets and reports have been linked into the current Access database.

Double-click on each table to open, view or edit the data. Saving the database will save changes back to the Resources database. Extreme caution should be utilized when directly accessing Resources data from an external source.

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